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Saskatchewan Game Management 1987-88

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SASKATCHEWAN
GAME MANAGEMENT
1987-1988

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Saskatchewan Parks, Recreation and Culture
Wildlife Branch
Population Management Section
3211 Albert Street
Regina, Saskatchewan
S4S 5W6

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ABSTRACT

HUNTING LICENCE SALES AND GAME HARVEST ESTIMATES
1985 to 1987

	Licence Sales[a]				Harvest			
	1985	1986	1987	% Change	1985	1986	1987	% Change
1. **Big Game**								
White-tailed Deer	48,807	52,160	47,105	-10%	19,861	34,742	29,399	-15%
Moose	10,507	11,486	11,046	-4%	2,068	3,566	3,487	-2%
Mule Deer	16,609	12,196	10,063	-17%	16,311	9,650	8,058	-17%
Antelope	3,181	3,279	3,713	+13%	1,718	2,534	2,950	+16%
Elk	4,322	4,060	3,486	-14%	478	868	814	-6%
Black Bear	7,534[b]	7,881[b]	7,703[b]	-2%	1,038	2,391	1,671	-30%
Woodland Caribou	152	128	---	---	24	45	---	---
Barren-ground Caribou	42	51	61	+20%	unk.	46	48	+4%
BIG GAME TOTAL	91,154	91,241	83,177	-9%	41,498	53,842	46,118	-13%
	87,970[c]	88,752[c]	80,802[c]	-9%				
2. **Game Birds**	1985	1986	1987					
Sask. Resident	38,243	41,317	35,190	-15%				
Canadian Resident	2,181	2,158	2,029	-6%				
Non-resident	3,497	3,731	3,895	+4%				
TOTAL	43,921	47,206	41,114	-13%				
					1985	1986	1987	% Change
Ducks					152,978	181,077	135,977	-25%
Geese					176,362	159,111	133,052	-16%
Sandhill Crane					6,202	7,480	4,774	-36%
Sharp-tailed Grouse					41,788	78,565	78,210	---
Hungarian Partridge					41,998	92,270	103,903	+13%
Ruffed Grouse					15,074	47,978	89,322	+86%
Spruce Grouse					4,229	11,883	14,213	+20%
Pheasant					7,084	10,557	16,439	+56%
Ptarmigan					N/A	N/A	330	N/A
GAME BIRD TOTAL					445,715	588,921	576,220	-2%

GROSS REVENUE FROM LICENCE SALES

	1985	1986	1987[d]	1987 vs 1986 % Change	Actual Dollars[d]
Big Game	2,518,125	2,511,380	2,744,710	+9%	+233,330
Game Birds	841,180	894,170	842,850	-6%	-51,320
TOTAL	3,359,305	3,405,550	3,587,560	+5%	+182,010

[a] final licence sale figures as of June 1, the following year

[b] includes free tags issued to big game licence holders for WMZ 58 to 61

[c] total sales excluding free bear tags

[d] does not include the Wildlife Habitat Certificate revenue.

EXECUTIVE SUMMARY

Big Game

Licence sales totalled 80,802 (excluding free bear tags) representing a 9% decline from 1986 and the lowest sale figures on record. Mule deer quotas were significantly reduced in 1987 but both antelope and special moose quotas were increased in response to population growth. Big game licence revenue rose slightly in response to licence fee increases for most species but it appeared that the new fee structure may have discouraged some hunters from participating in the seasons or resulted in hunters purchasing fewer big game licences than previous years.

Despite excellent hunting conditions during all seasons, the **white-tailed deer** harvest declined 15% from 34,742 deer in 1986 to 29,399 deer in 1987. Success rates remained normal but fewer hunters participated in the season. The provincial harvest was the 5th lowest on record and remains below the previous 10 year average. The southwest Grassland, northern Parkland, Forest Fringe and Forest ecozones supported relatively good whitetail populations and consequently accounted for a higher proportion of the harvest than in previous years. The Farmland and southeastern/east-central Parkland areas showed signs of population growth but densities were still below long-term average levels. All populations are expected to increase in 1988 as a result of the mild 1987-88 winter and good spring fawning conditions. Dry range conditions throughout southern Saskatchewan in 1988 may result in higher fawn mortality but the full impact of the drought is unknown at this time.

The **moose** harvest declined 2% from 3,566 moose in 1986 to 3,487 moose in 1987. Poor snow cover and unfrozen creeks and muskegs hampered hunters during the warm November seasons, causing many of the regular season hunters to leave early or not hunt at all. In the commercial Forest zones, most of the hunting activity and harvest occurs during the late special either-sex and regular bull-calf seasons. Populations appear to be good condition throughout most Forest zones but densities remain low in central Saskatchewan. Reports this spring of excessive mortality, as a result of a severe moose tick infestation may reduce densities but the impact of this ectoparasite on population levels will not be known until next fall.

The **mule deer** harvest declined 17% from 9,650 deer in 1986 to 8,058 deer in 1987 as a result of a reduction in antlerless licence quotas. Quotas have been reduced for the last 2 years because management efforts, aimed at the antlerless segment of the herd, have been successful in lowering populations to levels that the habitat is capable of supporting and that are tolerable to the landowners. This reduction was necessary to contend with a rapidly expanding mule deer population that, because of a series of mild winters and past harvest strategies directed primarily towards bucks, grew to an estimated 70,000 deer in 1985. For 1988, quotas are designed to promote moderate population growth in the primary mule deer zones. In peripheral Grassland and Farmland zones, small herds of mule deer continue to expand and slightly higher quotas will be implemented in some areas.

The **elk** harvest declined 6% from 868 animals in 1986 to 814 animals in 1987. Populations in most zones, with the exception of WMZ 7 and 50, appear to be stable or increasing slightly in response to management programs. The present limited either-sex and regular bulls-only harvest strategy will continue to be implemented to promote population growth and meet sport hunter demand.

The **antelope** harvest increased 16% from 2,533 animals in 1986 to 2,950 animals in 1987 in response to higher quotas and good hunting conditions. In recent years, populations have been increasing steadily in response to mild winters and good productivity, resulting in a provincial population in excess of 13,000 animals. Quotas continue to increase annually in response to population growth but the large number of licence applicants suggest hunting demand may remain unsatisfied for this species in coming years. The poor moisture conditions presently being experienced throughout southern Saskatchewan may result in lower kid:doe ratios this year but the full impact of the drought is currently unknown.

The **bear** harvest declined 30% from 2,391 animals in 1986 to 1,671 animals in 1987. Success rates remained high but fewer hunters, particularly Saskatchewan residents, went hunting. Field reports suggest bear populations remain high throughout all Forest zones.

The **woodland caribou** season was closed entirely in 1987 in response to low population levels. Improved forest road access and forest harvesting practices, which have resulted in habitat loss and allowed sport and Indian hunters easier access to the caribou, are believed responsible for the decline in caribou numbers, especially small herds in the commercial Forest areas. The concern over low caribou densities has promoted the Department to initiate a long-term study, designed to inventory populations throughout their provincial range. Upon completion of this study, the future of woodland caribou hunting in the province will be reviewed.

The **barren-ground caribou** harvest of 48 animals taken by licenced sport hunters was relatively low in 1987. Caribou populations migrated into the province in 1987-88 but remained further north than usual. Both the Beverly and Kaminuriak caribou herds appear to be either stable or growing slightly and are able to support a sport harvest in Saskatchewan. A harvest strategy designed to allow all Saskatchewan residents the opportunity to harvest barren-ground caribou is currently under consideration.

The **1988 big game hunting seasons** are highlighted by a number of changes to season lengths, bag limits and hunting opportunity. The 1988 seasons, particularly the November dates, will change slightly due to the normal roll-back of the calendar following progressively earlier opening dates for the last 5 years.

For **white-tailed deer,** the 2 week November season will be maintained in all southern WMZ's with a 1 deer bag limit. The Forest zones, with the exception of WMZ 70 to 76, will have a 2 deer bag limit in view of high deer populations. Early and late seasons will be held in WMZ 56 to 61, 65, 66 and 69. WMZ 62 to 64, 67 and 68 will have a late season only. The antlered harvest restrictions in WMZ 37, 38 and 39 will continue to allow further evaluation of selective harvest strategies and increase populations by protecting breeding females. An antlerless whitetail licence will be available for purchase by mule deer hunters in WMZ 6 and the WMZ 11 and 14 subzone in an effort to reduce populations and resolve crop depredation problems. The archery and muzzleloader season dates and bag limits will be similar to 1987, except for an extension of the archery season dates in WMZ 9 and 10 and implementation of two deer bag limits in the central Forest zones.

The **moose** season dates and quotas will be similar to 1987 except for a reduction of 75 licences in WMZ 55 and 68 and an increase of 100 licences in WMZ 50. A portion of WMZ 47 will be included with WMZ 68 for moose hunting as a result of a minor boundary change to resolve landowner-hunter problems during the deer season. The archery moose season will be changed to allow archers to hunt during the rut because of low hunter numbers and harvest. Unfilled archery licences from WMZ 55 and 68 will also be valid during the regular moose seasons provided the hunter harvests either a bull or calf moose. To provide more recreation opportunity, white-tailed deer and moose season dates will overlap for most Forest zones and hunters will be able to hunt both species at the same time. Guided moose season dates have been adjusted to better coincide with the resident season dates and resolve outstanding access and season structure problems for northern outfitters.

The **mule deer** either-sex rifle quotas will be increased in WMZ 1, 18, 19 and 46 and reduced in WMZ 2, 3, 6, 9, 10, 13, 14, 24, 26 and 27. Antlerless rifle quotas will be increased in WMZ 1, 5 and 10, reduced in WMZ 6 and 19, and eliminated completely in WMZ 7, 8, 12 and 23. Total licence quotas will be reduced 10% from 10,900 licences to 9,800 licences for all weapon types. Muzzleloader hunters will be offered more licences in view of increasing interest in this type of hunting. Some additional hunting opportunity will be available to archers in WMZ 15 and 31 in an effort to harvest some animals out of the coal field spoil piles near Estevan. Continued harvest of some antlerless animals is required to maintain long-term stability in the mule deer population structure. The season for rifle hunters will be contained within a 2 week period in early November to avoid landowner conflicts and provide reasonable hunting opportunity.

The **elk** season dates and quotas will be similar to 1987. There will be a 50 licence reduction in both the Cypress Hills east and west block areas and slight changes to the season structure in an effort to provide hunters with more high quality recreation experience. Either-sex quotas of 50 licences will be implemented in WMZ 54 (Thickwood Hills) and WMZ 63 (south of the Torch River) in view of increasing populations. In Fort a la Corne (WMZ 50) the quota will be reduced to 100 licences, the late season eliminated to protect cows and a portion of WMZ 43 included in the hunting area.

The **antelope** quotas will increase slightly in response to higher population densities. The season will open 2 days earlier than in recent years (Oct. 27) to reduce the number of antelope that have shed their horn sheaths prior to or early in the season. The exception will be WMZ 3 where a previous agreement with area ranchers dictates an October 29 opening date.

The **black bear** season dates and bag limits will be similar to 1987 except that the free bear tags in WMZ 58 to 61 will be eliminated. The free tags were designed to increase the bear harvest in these zones and indirectly reduce bear predation on moose calves. As a core group of bear hunters has become established in these zones and moose calf production has returned to normal in most areas, the free bear tags are no longer necessary.

The **woodland caribou** season will remain closed in 1988. The **barren-ground caribou** season dates and bag limits will be similar to 1987.

Game Birds

1987 **licence sales** totalled 41,114 compared to 47,206 in 1986. Provincial residents purchased 35,190 licences (down 15%) while out-of-province Canadian licence sales (2,029) were down 6% and non-resident licences (3,895) were up 4%. The perception of poor duck hunting opportunity and the increase in licence fees (Wildlife Habitat Certificate) are believed mainly responsible for the depressed licence sales. About 576,000 game birds were harvested in 1987, down 2% from the 589,000 recorded in 1986.

Active waterfowl hunters totalled 23,930 in 1987, 31% below 1986 and 48% below the 14-year average of 45,585.

The **duck** harvest of 135,977, 74% of which were **mallards**, was down 25% from the 181,077 reported in 1986. The 1987 mallard reproduction index of 2.03 immatures per adult was 2% below the 1967-86 average of 2.08. May 1988 pond counts of 1.1 million were down 25% from 1987 and remained 58% below the 1970-1979 average.

The total breeding duck population in southern Saskatchewan in 1988 was 4.1 million, down 27% from 1987, 58% below the 1970-79 average and 52% below the long term mean. Mallards, pintails and blue-winged teal were down 31%, 58% and 21% from 1987 and 66%, 92% and 70% from the 1970-79 average, respectively. Total ducks, mallards and pintails are the lowest recorded since beginning the survey in 1955. The duck bag limit for the 1988 hunting season will be 5 per day and 10 in possession of which not more than 3 may be mallards per day, 6 in possession.

The 1987 **goose** harvest decreased to 133,052 birds from the 159,111 reported in 1986. **Canada geese, white-fronted geese** and **snow geese** accounted for 59%, 21% and 19% of the harvest. The 1988 spring surveys showed local nesting Canadas equivalent to 1987 levels. Arctic goose production should be good in 1988. Bag limits for geese remain the same as in 1987.

The 1987 **sandhill crane** harvest decreased by 36% to 4,774 birds but was 4% above the 1979-86 average. The Last Mountain Lake area provided 64% of the harvest. Bag limits in 1988 will remain at 5 birds per day with similar season dates to 1987.

The 1987 **sharp-tailed grouse** harvest stabilized at 78,210, similar to the 1986 estimate of 78,565 birds and only 6% below the 1972-86 average. Sharptails fell to the number two upland bird in terms of hunter days generated (26,372) outranked slightly by Hungarian partridge (26,924). Sharptail reproduction fell 10% below average in 1987 to 1.27 juveniles per adult. Spring breeding surveys in 1988 on 25 areas showed a 1% increase in sharptail numbers in relation to 1987. Habitat conditions deteriorated in response to lack of snow; this decreased quality in habitat provided poorer nesting cover in the spring of 1988. Breeding populations in 1988 are similar to 1987 and bag limits have been maintained at 5 per day in the Grasslands and most Farmland zones. Season dates will be similar to those of 1987 in the south with movement to a Wednesday (September 21) opening from a traditional Monday opening. In the Forest Fringe, Forest and Shield zones, the season will also open on a Wednesday (September 7), two weeks earlier than the southern zones.

For the fifth consecutive year the **Hungarian partridge** harvest surpassed the sharp-tailed grouse harvest in Saskatchewan. A total of 103,903 partridge was harvested in 1987, more than double the 1985 harvest of 42,000. The reproductive index for 1987 was 3.1 juveniles per adult, down 44% from 1986 and only slightly above the 1957-1983 average (3.00). Spring surveys of 337 farmsteads in 1988 show a 75% increase in the overall provincial breeding population. Bag limits have been increased from 3 to 5 birds per day in Parkland zones 35 to 41 and prospects for partridge hunting are excellent for the fall of 1988.

An estimated 5,525 **pheasant** hunters took to the field in 1987 harvesting 16,439 cocks compared to 10,557 harvested in 1986. Active hunters increased by 16% and hunter days by 44%. The traditional late season was reinstated in 1987 and accounted for 14% of the pheasant harvest. Spring surveys in 1988 along 14 routes showed slightly increased populations relative to 1987 levels (up 10%) with an average of 5.33 crow calls per survey stop. Hunters can expect another above average year in 1988. The bag limit has been maintained at 3 cocks per day but in 1988 hunters will be allowed a possession limit of three times the daily bag limit. The late season will run from December 5 to December 21.

Ruffed grouse populations are entering their third year of increase in the apparent 10-year cycle of this species and in 1987 the reported kill almost doubled to 89,322 ruffed grouse. The 1987 reproductive index estimated on the basis of wing samples was 4.02 juveniles per adult. This estimate is 65% above the 1979-86 average and reflects a third consecutive year of good production.

Spring surveys in 1988 along 24 routes showed increased counts of drumming males (up 15%). In response to increased populations, bag limits have been maintained in northern zones at ten birds daily. Ruffed grouse hunting should be excellent for the next four years as populations cycle at their peak.

The 1987 **spruce grouse** harvest of 14,213 birds increased 20% from 1986 as a probable consequence of increased ruffed grouse hunter activity. Because spruce grouse are not highly regarded as a table bird, harvest is largely opportunistic by ruffed grouse hunters and increases when ruffed grouse populations peak. This species is believed to cycle concurrently with ruffed grouse populations and 1988 bag limits have been maintained at ten birds per day in all open zones except Parkland Zone 43 where the season dates and bag limits coincide with the ruffed grouse regulations.

Prior to 1987, the level of annual **ptarmigan** harvests was unknown although most utilization is believed limited to northern residents. The 1987 game bird hunter questionnaire was modified to obtain an estimate of hunting activity and harvest for this species. Hunter returns of this questionnaire indicated a harvest of 330 willow ptarmigan in WMZ 72 to 76. There were 68 active hunters who averaged 4.85 birds each. About 45 recreation days were provided and almost half of the harvest occurred during the week of December 7. The 1988-89 season dates will again overlap with the barren-ground caribou season to allow residents of WMZ 76 ample opportunity to harvest ptarmigan.

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BIG GAME

GENERAL

1987 HUNTING REGULATIONS

Hunting season dates, bag limits and licence quotas for each big game species are presented in Appendix 1.

All mule deer, antelope and special moose and elk licences, were available only through a computerized draw (Appendix 2). As in previous years, resident hunters could purchase bull/calf moose and antlered elk licences if they were not successful in the special licence draws for these species. White-tailed deer, black bear and guided moose licences were available to resident, Canadian resident and non-resident hunters. Only residents of WMZ 76 were eligible for barren-ground caribou licences.

Hunters were allowed to purchase two white-tailed deer licences, with an additional antlerless whitetail licence available to mule deer hunters in WMZ 2 and 6 and primitive weapon whitetail hunters in WMZ 11 and 14.

DATA COLLECTION TECHNIQUES

Licence Sales

Department of Parks, Recreation and Culture, Revenue Section, tabulated and mailed computerized draw licences directly to hunters.

White-tailed deer, woodland caribou, black bear, regular moose and regular elk licences were purchased through approximately 1,200 commercial vendors and Saskatchewan Parks, Recreation and Culture district offices distributed throughout the province. Vendors returned sold and unsold licences to Saskatchewan Parks, Recreation and Culture Revenue who were then able to determine provincial licence sale figures for each big game species.

It is important to note that since final licence sale figures for 1988 do not become available until June of the following year, all hunter survey statistics in this report use licence sales estimates derived from SPRC figures as of February 15, 1988. This accounts for small discrepancies between actual licence sales and estimates of active hunters for some seasons.

Hunter Survey

In November 1987, 27,500 big game questionnaires were mailed to resident, Canadian resident and non-resident hunters (Appendix 3). These hunters were randomly selected from among the 1986 big game regular licence holders and the 1987 computerized draw licence holders.

Follow-up questionnaires were mailed in early January 1988 to hunters who failed to reply to the first questionnaire. The cut-off date for return of questionnaires was February 12, 1988. Returned forms were edited and the data entered into a computer. The data print-out was available for analysis by March 21, 1988 incorporating usable data from approximately 15,000 questionnaires or 55 per cent of the total questionnaires mailed to hunters.

Biological Data Collection

All hunters using designated jaw/tooth collection points for big game in Saskatchewan were eligible to enter a draw for major prizes. All hunters providing biological samples received a Wildlife Co-operator Lapel Pin.

Approximately 68 Saskatchewan Wildlife Federation branches along with 14 private co-operator collection points were used to obtain samples to determine age and sex information for white-tailed deer, moose and elk. Age determinations for elk and moose older than calves were based on tooth (incisor) cementum deposition. Molar wear on lower white-tailed deer jaws were used to determine age class.

Population Surveys

Aerial surveys were conducted during the winter months to estimate population levels, herd segregation and productivity in selected moose, white-tailed deer, woodland caribou and elk populations. January and February white-tailed deer and elk population estimates were obtained using a stratified random block survey design. Transect surveys and sex-age surveys were employed to obtain population trend and herd structure data, respectively, for winter moose populations. Antelope herd structure data were obtained from July sex-age aerial surveys. Mule deer quadrat and transect surveys were not conducted in 1987-88 due to poor snow conditions in southern Saskatchewan.

A population structure investigation (Co-operative Wildlife Management Study) continued for all big game species with the assistance of Conservation Officers, Saskatchewan Wildlife Federation members and the general public. Co-operators classified observed animals by sex (male vs female) and age (fawn vs adult) class, and provided information on antler development for males observed in the survey.

1987 BIG GAME HUNTER QUESTIONNAIRE STATISTICS

Species	Actual Hunters		Hunter Success		Hunter Harvest		Days of Recreation
White-tailed Deer							
1st Archery	2,077	> 2,146	25%	> 26%	518	> 554	10,473
2nd Archery	69		52%		36		202
1st Muzzleloader	1,426	> 1,451	37%	> 37%	525	> 536	5,229
2nd Muzzleloader	25		44%		11		103
1st Rifle	31,245	> 34,628	82%	> 81%	25,715	> 28,114	129,585
2nd Rifle	3,383		71%		2,399		11,027
Antlerless	271		72%		195		593
	38,496		76%		29,399		157,212
Mule Deer							
Archery Either-sex	779		34%		263		3,681
Archery Antlerless	44		34%		15		166
Muzzle Either-sex	138		73%		101		445
Muzzle Antlerless	127		78%		99		337
Rifle Either-sex	6,628		89%		5,929		13,602
Rifle Antlerless	1,872		88%		1,651		3,187
	9,588		84%		8,058		21,418
Moose							
Archery	25		20%		5		109
Special Either-sex	2,049		52%		1,068		8,623
Regular Bull-calf	7,380		31%		2,306		33,785
Guided	217		unk		108		unk
	9,671		36%		3,487		42,517
Antelope							
Archery	142		29%		41		636
Rifle	3,382		86%		2,909		6,175
	3,524		84%		2,950		6,811
Elk							
Special Either-sex	1,184		36%		428		5,143
Regular Bulls Only	1,780		22%		386		7,843
	2,964		27%		814		12,986
Bear							
1st Either-sex	3,114		37%		1,164		13,063
2nd Either-sex	309		56%		174		1,145
Free Tag	1,455		23%		333		6,178
	4,878		34%		1,671		20,386
Barren-ground Caribou							
1st Either-sex	36		72%		26		52*
2nd Either-sex	25		88%		22		44*
	61		79%		48		96
Total	69,182		67%		46,427		261,426

*subjective estimates only

WHITE-TAILED DEER

A. REVIEW OF 1987 HUNTING SEASON

1. Licence Sales*

	1982	1983	1984	1985	1986	1987**	% Change
1st Licence Sales							
Resident	57,320	50,309	49,603	45,532	48,432	41,533***	-14%
Canadian Resident	1,095	607	705	786	491	438	-11%
Non-resident	68	68	60	136	157	253	+61%
2nd Licence Sales							
Resident (Antlerless)	---	---	---	419	1,152	339***	-71%
Resident	6,433	4,594	4,971	---	---	4,453	-10%
Canadian Resident	41	19	9	---	---	18	+100%
Non-resident	21	0	6	---	---	71	+1000%
TOTAL	64,957	55,600	55,356	46,873	50,232	47,105	---
Resident Archery**	1,590	1,411	1,543	1,357	1,341	---	---
Resident Muzzleloading**	368	575	684	577	587	---	---
TOTAL	66,915	57,586	57,583	48,807	52,160	47,105	-10%

* Final (June 1) sales figures; however all data analysis based on figures available in February.

** For 1987 the 1st and 2nd licences were valid for archery, muzzleloader and rifle seasons; a separate licence was not required for each weapon type.

*** Fewer antlerless licences were sold due to restrictions in mule deer quotas; some mule deer hunters were allowed to purchase antlerless whitetail licences.

2. Hunting Activity and Harvest

- The 1987 November hunting season was similar to the 1986 season, with moderate temperatures and light snow conditions throughout the province. Fewer hunters took advantage of the excellent hunting opportunity, 38,496 active hunters versus 52,188 active hunters in 1986, representing the lowest number of whitetail hunters in the field in the past decade.
- A total of 47,105 licences was sold, representing a 10% decline from 1986 and 22% from the 1980-86 average. The largest change involved resident hunters, for which licence sales decreased from 48,432 in 1986 to 41,533 in 1987, despite the implementation of a second licence in the northern forest zones. There were small increases in the number of Canadian and Non-resident licences sold, but because of current season restrictions, they represent only a small proportion of the overall licence sales.
- Field reports and contact with hunters suggest that the 1987 licence fee increases, contributed to reduced licence sales and hunter activity. The resident whitetail licence fee increased from $25 to $30 and a new $10 Wildlife Habitat Certificate was required for all hunters.
- On a provincial scale, harvest declined from 34,742 (1986) to 29,399 (1987), the lowest harvest since 1980, except for 1985 when cold temperatures during the November season reduced harvest to 19,860 deer (Table 1 and 2, Figure 1 and 2). Overall hunter success was similar to previous years with hunters spending 157,212 days afield (5 days/animal) but fewer hunters resulted in a lower harvest, despite the good weather conditions throughout the hunting season.
- The Parkland, Grassland, Farmland, Forest and Forest Fringe ecological zones accounted for 30%, 19%, 20%, 22%, and 9% of the provincial harvest, respectively. These percentages represent a slight change from previous years with the Forest harvest almost doubling as a result of improved populations and liberalized seasons (2 deer limit).

Table 1. Provincial white-tailed deer harvest, 1987

Ecological Zone	# Actual Hunters	# Zone Hunters	# Successful Hunters	% Hunter Success	Harvest	Harvest Structure			Hunter Days	Hunter Days/ Animal
						Males	Females	Young		
GRASSLAND	6,782	9,689	5,535	81.6	5,535	2.80	1	0.35	22,611	4
FARMLAND	8,323	12,921	5,987	71.9	5,987	3.05	1	0.34	32,458	5
PARKLAND	11,175	16,739	8,751	78.3	8,751	3.11	1	0.47	49,159	6
FOREST FRINGE	3,267	5,150	2,558	78.2	2,558	2.74	1	0.58	14,470	6
FOREST	8,944	12,414	6,568	73.4	6,568	2.34	1	0.40	38,485	6
SHIELD	5	7	0	0.0	0	0.00	1	0.00	29	0
TOTAL	38,496	56,920	29,399	76.3	29,399	2.81	1	0.41	157,212	5

Season Type	# Actual Hunters	# Zone Hunters	# Successful Hunters	% Hunter Success	Harvest	Harvest Structure			Hunter Days	Hunter Days/ Animal
						Males	Females	Young		
REGULAR	34,628	51,721	28,114	81.1	28,114	2.90	1	0.41	140,612	5
ANTLERLESS	271	272	195	72.0	195	0.01	1	0.62	593	3
ARCHERY	2,146	3,081	554	25.8	554	2.42	1	0.44	10,675	19
MUZZLELOADER	1,451	1,846	536	36.9	536	1.68	1	0.22	5,332	10
TOTAL	38,496	56,920	29,399	76.3	29,399	2.81	1	0.41	157,212	5

Table 2. Provincial white-tailed deer harvest, 1981-1987

Ecological Zone	Harvest 1981	1982	1983	1984	1985	1986	1987	Percent Hunter Success 1981	1982	1983	1984	1985	1986	1987
GRASSLAND*	4,224	4,243	3,893	6,110	3,840	8,129	5,535	56	61	61	83	47	74	82
FARMLAND	13,263	11,897	12,629	11,287	5,486	7,944	5,987	53	44	55	78	44	64	72
PARKLAND	15,109	13,047	11,255	13,608	7,384	11,358	8,751	55	52	57	78	44	65	78
FOREST FRINGE	---	---	---	2,145	1,336	2,900	2,558	--	--	--	67	45	70	78
FOREST**	8,553	7,029	5,797	5,669	1,815	4,410	6,568	--	--	--	59	37	61	73
1ST LICENCE	5,912	4,615	3,938	3,077	---	---	4,122	38	33	33	57	--	--	76
2ND LICENCE	2,641	2,414	1,859	2,592	---	---	2,446	43	45	46	62	--	--	70
TOTAL	41,149	36,216	33,574	38,820	19,860	34,742	29,399	50	47	53	75	43	66	76

* Includes harvest and hunt activity on antlerless licences offered to some either-sex mule deer licence holders.

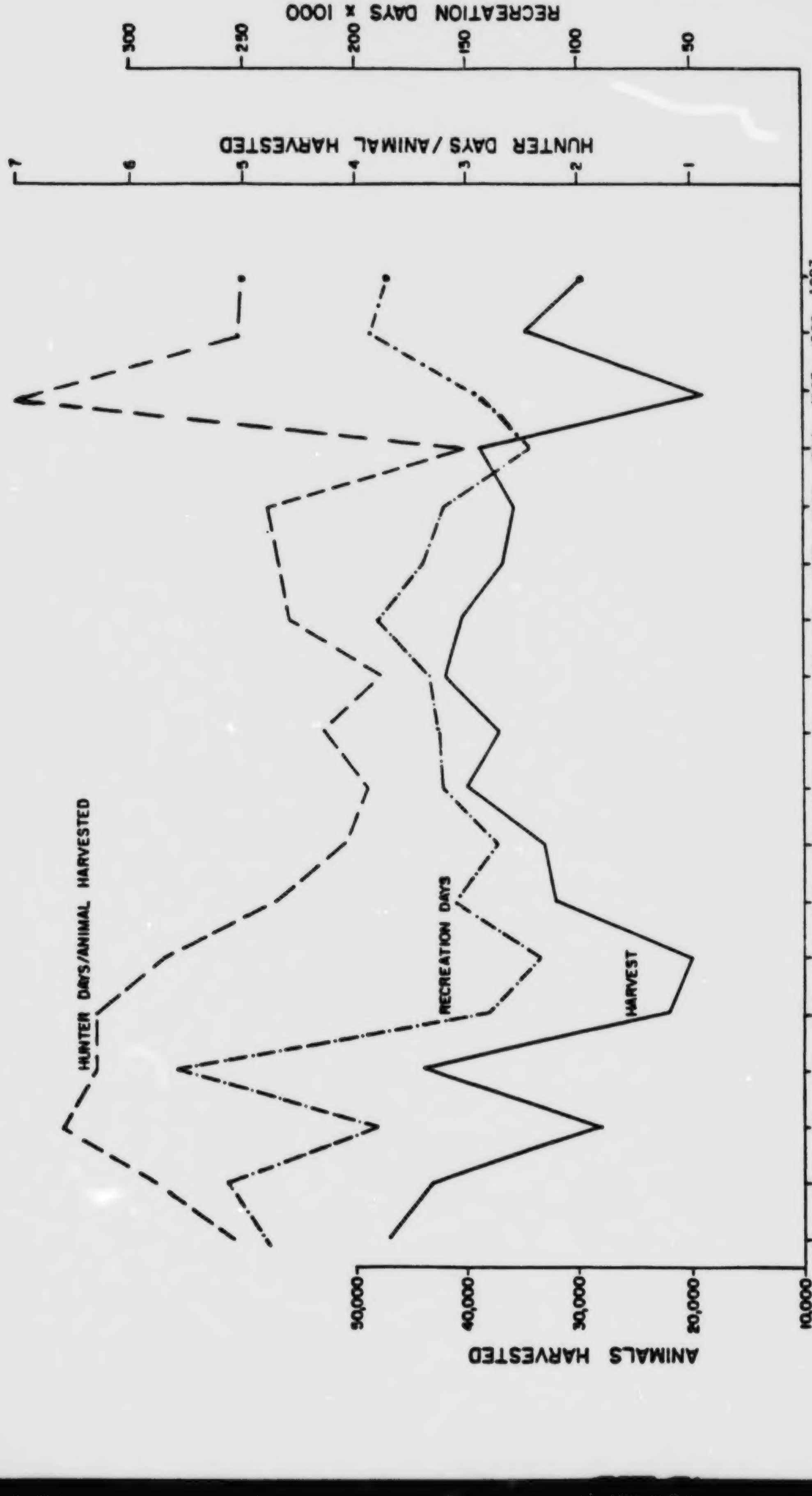
**Total 1st and 2nd licence hunting activity

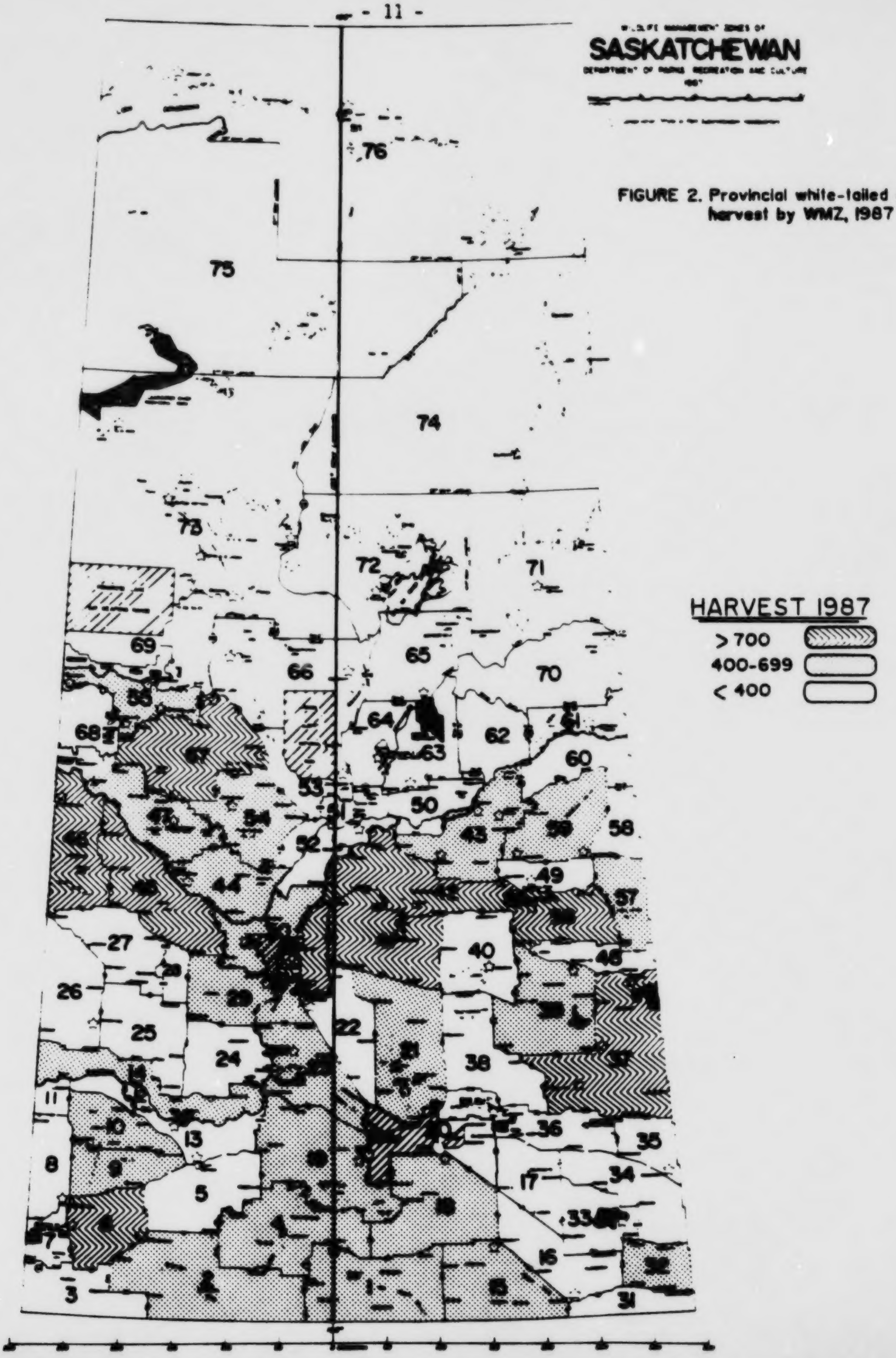
Table 2 (Continued). Provincial white-tailed deer harvest, 1981-1987

Ecological Zone	Hunter Days 1981	1982	1983	1984	1985	1986	1987	Hunter Days/Animal 1981	1982	1983	1984	1985	1986	1987
GRASSLAND	14,441	14,214	12,453	12,032	19,075	29,015	22,611	3.4	3.4	3.2	2	5	4	4
FARMLAND	50,058	48,212	48,474	30,286	40,442	41,378	32,458	4.7	4.1	3.8	3	7	5	5
PARKLAND	66,230	55,313	49,791	39,967	52,869	65,142	49,159	5.9	4.2	4.4	3	7	6	6
FOREST FRINGE	---	---	---	9,365	12,270	18,196	14,470	---	---	---	4	9	6	6
FOREST	59,394*	51,891*	47,937*	29,619*	23,021	36,472	38,485	6.9	7.4	8.3	5	13	8	6
1ST LICENCE	---	---	---	---	---	---	27,153	---	---	---	---	---	---	7
2ND LICENCE	---	---	---	---	---	---	11,332	---	---	---	---	---	---	5
SHIELD	---	---	---	---	---	---	29	---	---	---	---	---	---	0
	190,123	169,630	159,235	121,268	147,678	190,203	157,212	4.6	4.7	4.8	3	7	5	5

*Two licences were offered in the Forest between 1981 and 1984 but hunter days per licence type could not be separated.

Figure 1. Estimated provincial hunter success and harvest pressure during the white-tailed season, 1970-1987




WILDLIFE MANAGEMENT ZONES OF
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DEPARTMENT OF PARKS, RECREATION AND CULTURE
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FIGURE 2. Provincial white-tailed deer harvest by WMZ, 1987

- Provincially, 34,628 regular, 271 antlerless, 2,146 archery and 1,451 muzzleloader hunters accounted for 95%, 1%, 2% and 2% of the harvest respectively; success rates for these respective season types were 81%, 72%, 26% and 37% (Table 1). A new one licence system, valid for all weapon types, was introduced in 1987. Traditional rifle hunters could now use their licence during the primitive weapon seasons and if unsuccessful, they had the opportunity to again hunt during the rifle season. Primitive weapon hunters, that normally had to buy an additional licence if they wished to hunt with a rifle (archery hunters only), now had the chance to use an unfilled licence in any season that they wished, provided they used the required weapon. This licencing system makes it difficult to separate hunt activity by weapon type in the harvest statistics, but it has proven popular to the sport hunter.
- The Grassland rifle harvest of 5,062 deer, is considerably lower than 1986 but remains above the long-term average for the 1980's (Table 3). The highest harvests occurred in WMZ 1, 2, 4, 6 and 14, slightly different from 1986, but similar to previous years when WMZ 1 and 2 constituted a large part of the overall harvest.
- The Farmland rifle harvest of 5,561 deer also declined from 1986 and continues to be well below the 1981-1986 average of 10,418 deer (Table 3). Field reports of lower deer populations throughout the Farmland zones, particularly WMZ 16, 17, 21, 23, 24 and 29 are cause for some concern. An aerial survey conducted in WMZ 21 during the 1987-88 winter suggests that densities on prime habitat are similar to densities in good parkland habitat, but the shortage of habitat is preventing population growth. Preseason herd structure data indicate good production and normal sex ratios in most Farmland populations following the last two mild winters, but it appears habitat availability may be the limiting factor. WMZ 15, 18, 19, 29 and 30 presently support the majority of the Farmland harvest, similar to previous years (Table 4).
- The Parkland rifle harvest of 8,547 deer is lower than 1986 and still below the 1981-1986 average of 11,968 deer (Table 5). Despite increasing deer populations following two mild winters, overall deer numbers on the primary whitetail range of southeastern Saskatchewan,

Table 3. Grassland and Farmland either-sex white-tailed deer rifle harvest, 1987.

Species = 1R1 White-Tailed Deer, Rifle   Ecological Division = 1 Grassland

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
01	588	821	562	98.94	562	2.89	1	0.33	2,027	3.61	0.2436
02	655	947	622	94.96	622	4.27	1	0.33	2,474	3.98	0.2325
03	107	155	93	86.92	93	6.67	1	0.67	272	2.92	0.0632
04	616	892	685	100.00	685	2.76	1	0.26	1,909	2.79	0.2351
05	373	540	348	93.30	348	5.21	1	0.50	1,153	3.31	0.1932
06	634	918	592	93.38	592	5.45	1	0.82	2,160	3.65	0.5148
07	179	259	163	91.06	163	4.13	1	0.38	502	3.08	0.2649
08	138	200	115	83.33	115	1.90	1	0.20	352	3.06	0.1037
09	512	740	433	84.57	433	3.58	1	0.29	1,543	3.56	0.4491
10	458	662	407	88.86	407	2.06	1	0.09	1,425	3.50	0.4018
11	138	200	126	91.30	126	2.30	1	0.10	505	4.01	0.5126
12	125	181	59	47.20	59	3.00	1	0.00	297	5.03	0.8633
13	402	581	318	79.10	318	3.82	1	0.24	1,116	3.51	0.2732
14	647	936	540	83.46	540	2.30	1	0.35	2,087	3.86	0.3740
Total	5,554	8,033	5,062	91.14	5,062	3.26	1	0.32	17,821	3.52	0.2750

Species = 1R1 White-Tailed Deer, Rifle   Ecological Division = 2 Farmland

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
15	488	773	511	100.00	511	2.91	1	0.27	1,405	2.75	0.2089
16	299	474	237	79.26	237	3.29	1	0.29	858	3.62	0.1616
17	385	611	285	74.03	285	4.75	1	0.67	1,356	4.76	0.3546
18	483	766	385	79.71	385	2.92	1	0.24	1,402	3.64	0.1882
19	583	925	474	81.30	474	2.63	1	0.38	2,131	4.50	0.2311
20	261	414	204	78.16	204	3.25	1	0.33	1,024	5.02	0.1850
21	700	1,110	570	81.43	570	3.66	1	0.66	3,063	5.37	0.3654
22	310	492	215	69.35	215	2.33	1	0.53	1,258	5.85	0.2658
23	478	759	359	75.10	359	5.43	1	0.50	1,930	5.38	0.3362
24	327	518	270	82.57	270	4.08	1	0.54	1,262	4.67	0.2613
25	296	470	274	92.57	274	2.65	1	0.05	901	3.29	0.1548
26	198	315	118	59.60	118	2.00	1	0.20	701	5.94	0.1587
27	280	444	207	73.93	207	2.00	1	0.29	1,001	4.84	0.2037
28	294	466	281	95.58	281	2.04	1	0.13	1,165	4.15	0.8597
29	756	1,199	592	78.31	592	3.56	1	0.44	3,304	5.58	0.6195
30	817	1,295	581	71.11	581	2.70	1	0.23	3,503	6.03	0.4831
Total	6,956	11,030	5,561	79.95	5,561	3.05	1	0.35	26,263	4.72	0.2891

Table 4. White-tailed deer harvest (all weapon types) for specific WMZ's*, 1984 to 1987.

WMZ	1984	1985	1986	1987
15	1063	653	795	523
16	1195	421	406	237
17	654	230	540	300
23	659	248	563	374
29	927	618	694	614
30	1332	587	802	692
32	2072**	1152**	704	455
33	1185	368	439	381
34	1284	310	807	374
41	650	491	466	711
42	571	395	683	718
46	851	585	1064	1059
47	650	470	424	581
54	589	383	624	639
56	1238***	320	836	1204***
59	770***	265	834	1212***
67	1151***	345	503	1190***
68	531***	225	413	524***

* Represent high harvest zones in 1987
** Includes antlerless deer harvest
***Includes second licence harvest

Table 5. Parkland and Forest Fringe white-tailed deer rifle harvest, 1987.

Species = 1R1 White-Tailed Deer, Rifle Ecological Division = 3 Parkland

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
31	362	548	352	97.24	352	3.10	1	0.43	1,228	3.49	0.4869
32	492	744	444	90.24	444	2.53	1	0.47	1,479	3.33	0.5301
33	501	759	366	73.05	366	3.89	1	0.32	1,802	4.92	0.4640
34	452	685	366	80.97	366	4.56	1	0.63	1,911	5.22	0.3548
35	384	581	340	88.54	340	3.26	1	0.58	1,633	4.80	0.6247
36	357	540	218	61.06	218	1.89	1	0.39	1,241	5.69	0.2393
37	1,069	1,617	995	93.08	995	3.82	1	0.45	5,685	5.71	0.5024
38	262	396	126	48.09	126	16.00	1	0.00	1,063	8.44	0.1657
39	555	840	411	74.05	411	4.83	1	0.33	2,597	6.32	0.3415
40	215	326	144	66.98	144	4.43	1	0.14	875	6.08	0.1616
41	873	1,321	696	79.73	696	2.31	1	0.53	3,869	5.56	0.5364
42	822	1,243	714	86.86	714	3.45	1	0.63	3,788	5.31	0.5109
43	536	810	429	80.04	429	2.62	1	0.38	2,441	5.69	0.3601
44	709	1,073	533	75.18	533	2.33	1	0.28	2,876	5.40	0.6283
45	995	1,506	796	80.00	796	3.16	1	0.62	4,154	5.22	0.5419
46	1,093	1,654	1,036	94.78	1,036	3.29	1	0.53	5,602	5.41	0.9400
47	712	1,077	581	81.60	581	2.78	1	0.45	3,304	5.69	0.5777
Total	10,390	15,718	8,547	82.26	8,547	3.18	1	0.47	45,547	5.33	0.4626

Species = 1R1 White-Tailed Deer, Rifle Ecological Division = 4 Forest Fringe

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
48	315	500	222	70.48	222	2.73	1	0.27	1,403	6.32	0.5543
49	252	400	200	79.37	200	3.80	1	0.60	989	4.95	0.4129
50	373	592	252	67.56	252	1.65	1	0.30	1,666	6.61	0.4998
51	273	433	178	65.20	178	2.42	1	0.58	1,108	6.22	0.3856
52	469	744	366	78.04	366	2.54	1	0.58	2,239	6.12	0.7686
53	306	485	241	78.76	241	4.45	1	0.45	1,200	4.98	0.4329
54	719	1,140	625	86.93	625	3.00	1	0.83	3,361	5.38	0.5900
55	378	599	437	100.00	437	2.63	1	0.74	1,706	3.90	0.4550
Total	3,085	4,891	2,520	81.69	2,520	2.75	1	0.59	13,671	5.43	0.5205

which had traditionally comprised 40% of the Parkland harvest, remain below average. Populations in WMZ 31 appear to be improving rapidly, but habitat quantity throughout most of southeastern Saskatchewan will continue to suppress population growth, except following a series of mild winters. The remaining Parkland zones, except for WMZ 37, 38, and 39 where special hunting strategies are in effect, now support the major portion of the Parkland harvest. WMZ 37, 41, 42, 45 and 46 are the highest harvest zones in the Parkland ecozone (Table 5). Hunting pressure has shifted to these zones in response to lower populations elsewhere and media efforts and season restrictions implemented by the Department, designed to take pressure off the southeast Saskatchewan deer herd.

- The Forest Fringe rifle harvest of 2,520 is slightly lower than 1986 but continues to be above the long-term average of 2,127 deer (Table 5). This ecological zone was created when the new Wildlife Management Zones were implemented in 1984. The highest harvest occurred in WMZ 52, 54 and 55 located near Prince Albert and Meadow Lake.
- The Forest rifle harvest of 6,425 deer is the highest since 1982 and higher than the 1981-1986 average of 5,545 deer (Table 6). Two deer licences offered in 1981 to 1984 and 1987 as result of above normal deer populations are responsible for the higher harvest estimates. WMZ 56, 57, 59, 67 and 68 are preferred hunting locations and consequently comprise the majority of the Forest harvest (Table 4).
- Although the majority of the whitetail zones have either-sex seasons, special harvest strategies have been implemented in WMZ 37, 38 and 39 in an effort to increase populations by controlling harvest structure.
- In WMZ 38, where a bucks only season has been implemented since 1985, harvest has declined from 175 deer (1985), 265 deer (1986), to 130 deer (1987; Table 7). The bucks only harvest strategy was intended to reduce overall sport harvest and protect breeding females. It appears that this strategy is working, although increased licence fees in 1987 may be partially responsible for lower harvests.

Table 6. Forest 1st and 2nd licence white-tailed deer rifle harvest, 1987.

Species = 1R1 White-Tailed Deer, Rifle Ecological Division = 5 Forest

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
56	999	1,584	736	73.67	736	2.96	1	0.37	5,223	7.10	1.1049
57	551	873	459	83.30	459	3.11	1	0.48	2,830	6.17	0.8555
58	229	363	170	74.24	170	4.29	1	1.29	1,152	6.78	0.5131
59	866	1,373	659	76.10	659	2.64	1	0.41	4,513	6.85	0.7898
60	308	488	226	73.38	226	1.39	1	0.26	1,532	6.78	0.3992
61	70	111	44	62.86	44	3.00	1	2.00	291	6.61	0.0957
62	168	266	115	68.45	115	2.50	1	0.38	773	6.72	0.2069
63	285	451	204	71.58	204	2.62	1	0.62	1,460	7.16	0.2579
64	124	196	63	50.81	63	2.40	1	0.00	444	7.05	0.1252
65	30	48	26	86.67	26	22.20	1	3.70	137	5.27	0.0210
66	131	207	107	81.68	107	1.80	1	0.10	601	5.62	0.0532
67	819	1,299	718	87.67	718	2.52	1	0.36	3,964	5.52	0.4569
68	439	696	303	69.02	303	2.62	1	0.29	2,197	7.25	0.5283
69	208	329	181	87.02	181	1.56	1	0.50	990	5.47	0.1277
70	5	7	0	0.00	0	0.00	1	0.00	7	0.00	0.0008
71	2	4	4	100.00	4	3.70	1	0.00	19	4.75	0.0010
72	7	11	0	0.00	0	0.00	1	0.00	49	0.00	0.0026
73	16	26	11	68.75	11	1.00	1	1.00	74	6.73	0.0016
Total	5,255	8,332	4,026	76.61	4,026	2.57	1	0.41	26,255	6.52	0.1590

Species = 1R2 White-Tailed Deer, Rifle Ecological Division = 5 Forest

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
56	708	777	436	61.58	436	2.15	1	0.38	2,277	5.22	0.4817
57	434	476	294	67.74	294	2.38	1	0.48	1,435	4.88	0.4337
58	195	214	113	57.95	113	1.70	1	0.40	643	5.69	0.2864
59	675	741	512	75.85	512	1.84	1	0.44	2,110	4.12	0.3599
60	242	265	174	71.90	174	1.37	1	0.16	828	4.76	0.2157
61	76	83	51	67.11	51	1.17	1	0.17	209	4.10	0.0687
66	66	73	40	60.61	40	1.25	1	0.50	198	4.95	0.0175
67	573	628	443	77.31	443	2.96	1	0.39	1,938	4.37	0.2234
68	265	290	221	83.40	221	2.18	1	0.41	915	4.14	0.2200
69	149	163	116	77.85	116	0.87	1	0.27	475	4.09	0.0612
Total	3,383	3,710	2,399	70.91	2,399	1.98	1	0.38	11,027	4.60	0.0667

Table 7. White-tailed deer population structure and harvest (all weapon types) from Wildlife Management Zones with special harvest strategies, 1985 to 1987.

WMZ	Preseason Herd Structure Males/100 Females/Fawns			Preseason Female Observations % Does without Fawns			Preseason Male Observations % Yearlings/% Mature			Sport Harvest			Harvest Strategy
	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987	
2	34/100/101	33/100/97	64/100/73	31	37	51	47/53	49/51	56/44	421	1121*	640*	either-sex/antlerless
6	57/100/90	42/100/91	39/100/92	49	43	42	44/56	49/51	34/66	410	1268*	596*	either-sex/antlerless
11	Sample size too small			23	Sample size too small		Sample size too small			115	243	130*	either-sex/antlerless
14	40/100/97	43/100/94	43/100/84	36	35	46	48/52	53/47	59/41	451	1087	647*	either-sex/antlerless
21	35/100/99	33/100/100	42/100/99	35	35	36	30/70	43/57	49/51	560	595	596	either-sex
31	24/100/98	30/100/102	22/100/103	35	31	41	59/41	53/47	43/57	869*	729	381	either-sex/antlerless
37	42/100/81	38/100/85	39/100/102	45	44	35	39/61	35/65	40/60	536**	1614**	1033**	bucks/either-sex
38	58/100/54	61/100/68	39/100/112	61	54	29	29/71	33/67	47/53	175***	265***	130***	bucks only
39	57/100/92	57/100/112	42/100/110	45	33	29	22/78	29/71	34/66	485	1321	430**	bucks/either-sex

* Includes antlerless harvest (either for primitive weapons or rifle season)
** Includes some bucks only harvest (1 week bucks and 1 week either sex)
***Bucks only season

Note: All other harvest figures are from either-sex seasons.

- In WMZ 37 and 39, a one week bucks only and one week either-sex season has been in effect in WMZ 37 since 1984 and in WMZ 39 since 1987. The purpose was to increase populations by reducing harvest on the adult female segment of the herd without shifting hunting pressure to other zones. Harvests of 1,033 deer in WMZ 37 and 430 deer in WMZ 39, are substantially lower than 1986 and similar to harvest rates experienced in 1985 (Table 7). There was concern over the high harvests in 1986, caused primarily by an influx of hunters that normally go to southeast Saskatchewan, but it appears that these hunters dispersed elsewhere or didn't hunt at all in 1987.

3. Harvest Structure

(a) Hunter Questionnaire Survey

- The 1987 provincial harvest structure was estimated to be 2.81 bucks/doe/0.41 fawns and represents the highest buck to doe ratio in the past 5 years (Table 8). Fawn:doe ratios are similar to 1986 but higher than previous years.
- The highest ratio of 3.11 bucks/doe was reported for the Parkland zones and is consistent with field reports that suggest there was a large number of bucks throughout the northern Parklands and that hunters select for mature bucks when populations are high. Traditionally, the Grassland zones have the highest buck/doe ratio, but a combination of antlerless hunting opportunity and lower overall harvest has reduced the ratio to 2.80 bucks/doe. A ratio of 3.05 bucks/doe in the Farmland zones is significantly higher than the approximately 2.00 bucks/doe normally observed in this ecozone. Although overall Farmland population and harvest levels are lower than the long-term average, two mild winters have contributed to higher yearling buck numbers and may account for the increase in the buck/doe ratio.
- Lower ratios of 2.74 and 2.34 in the Forest Fringe and Forest zones, respectively, may be indicative of forest habitats where bucks are harder to kill and hunters tend to shoot more antlerless animals.

Table 8. Provincial white-tailed deer harvest structure, 1984-1987*

Ecological Zone	1984 Harvest Ratio # Males	1984 Harvest Ratio # Females	1984 Harvest Ratio # Young	1985 Harvest Ratio # Males	1985 Harvest Ratio # Females	1985 Harvest Ratio # Young	1986 Harvest Ratio # Males	1986 Harvest Ratio # Females	1986 Harvest Ratio # Young	1987 Harvest Ratio # Males	1987 Harvest Ratio # Females	1987 Harvest Ratio # Young
GRASSLAND	3.44	1	0.27	3.40	1	0.21	2.07	1	0.39	2.80	1	0.35
FARMLAND	1.93	1	0.28	1.93	1	0.32	2.00	1	0.33	3.05	1	0.34
PARKLAND	2.18	1	0.36	2.01	1	0.37	3.07	1	0.48	3.11	1	0.47
FOREST FRINGE	2.00	1	0.47	2.42	1	0.26	2.40	1	0.38	2.74	1	0.58
FOREST	1.53	1	0.45	2.43	1	0.31	2.30	1	0.38	2.34	1	0.40
NORTHERN SHIELD	0.00	1	0.00	0.00	1	0.00	0.00	1	0.00	0.00	1	0.00
PROVINCIAL TOTAL	2.13	1	0.35	2.26	1	0.32	2.38	1	0.40	2.81	1	0.41

*Special seasons that influence the either-sex harvest structure:

1987 - Antlerless WMZ 2, 6, 11 & 14 (Grassland); Antlered WMZ 37, 38 & 39 (Parkland)
1986 - Antlerless WMZ 2 & 6 (Grassland); Antlered WMZ 37 & 38 (Parkland)
1985 - Antlerless WMZ 31 & 32 (Parkland); Antlered WMZ 37 & 38 (Parkland)
1984 - Antlerless WMZ 31 & 32 (Parkland); Antlered WMZ 37 (Parkland)

- The fawn/doe harvest ratio (0.41 fawns/doe) is similar to 1986 and higher than previous years, due to good fawn production following two mild winters and harvest strategies designed to place heavier hunting pressure on antlerless deer (Table 8). Fawn/doe ratios of 0.40 to 0.58 in the Parkland, Fringe and Forest zones are higher than normal and are indicative of higher whitetail populations and heavier hunting pressure associated with the 2 deer bag limit.

(b) Biological Collection Program

- In 1987, the lower jaw collection program, implemented largely on a volunteer basis by members from 68 branches of the Saskatchewan Wildlife Federation and other wildlife interest groups, produced a provincial sample of 2,266 whitetail jaws of known sex and age class. Each branch was paid $5/usable sample in an effort to increase sample sizes and obtain data on a provincial basis. In previous years, less than 1,000 samples were collected from Department check stations, located at Estevan and Carlyle and represented sex-age data from southeastern Saskatchewan only. The 1987 information should be more representative of the true harvest, because hunters with mature bucks are traditionally reluctant to provide jaw samples to check station attendants.
- Overall harvest structure was estimated to be 3.14 bucks/doe/0.79 fawns (n = 2262) in 1987 compared to 2.34 bucks/doe/0.92 fawns (n = 734) in 1986 and 1.15 bucks/doe/0.49 fawns (n = 599) in 1985 (Table 9, Figure 3). The large increase in the buck/doe ratio is of particular significance and may be attributable to a greater proportion of bucks in the live population as a result of two mild winters and/or better sampling technique on the entire whitetail population.
- The fawn age class constituted a smaller portion of the 1987 sample. Comparing data from southeastern Saskatchewan, the fawn age class comprises 14% versus 24% in 1986 and is similar to 15% fawns observed in the 1984 harvest when populations were high (Table 10). The yearling age class comprised a comparatively larger portion of the sample; 34% versus 28% in 1986 and 18% in

Table 9. Sex and age composition of the 1987 Saskatchewan white-tailed deer harvest from lower jaw samples.

```
SEX       AGE

Frequency|
 Percent |
 Row Pct |
 Col Pct |    0.5|    1.5|    2.5|    3.5|    4.5|    5.5|    6.5|    7.5|    8.5|    9.5|    9.9| Total
---------+-------+-------+-------+-------+-------+-------+-------+-------+-------+-------+-------+
FEMALE   |    190|    168|     91|     83|     39|     23|     17|      9|      8|      6|     15|   649
         |   8.38|   7.41|   4.02|   3.66|   1.72|   1.02|   0.75|   0.40|   0.35|   0.26|   0.66| 28.64
         |  29.28|  25.89|  14.02|  12.79|   6.01|   3.54|   2.62|   1.39|   1.23|   0.92|   2.31|
         |  52.20|  21.62|  23.10|  26.27|  23.35|  26.74|  29.31|  28.13|  50.00|  50.00|  34.09|
---------+-------+-------+-------+-------+-------+-------+-------+-------+-------+-------+-------+
MALE     |    172|    608|    303|    233|    128|     62|     41|     23|      8|      6|     29|  1613
         |   7.59|  26.83|  13.37|  10.28|   5.65|   2.74|   1.81|   1.02|   0.35|   0.26|   1.28| 71.18
         |  10.66|  37.69|  18.78|  14.45|   7.94|   3.84|   2.54|   1.43|   0.50|   0.37|   1.80|
         |  47.25|  78.25|  76.90|  73.73|  76.65|  72.09|  70.69|  71.88|  50.00|  50.00|  65.91|
---------+-------+-------+-------+-------+-------+-------+-------+-------+-------+-------+-------+
UNKNOWN  |      2|      1|      0|      0|      0|      1|      0|      0|      0|      0|      0|     4
         |   0.09|   0.04|   0.00|   0.00|   0.00|   0.04|   0.00|   0.00|   0.00|   0.00|   0.00|  0.18
         |  50.00|  25.00|   0.00|   0.00|   0.00|  25.00|   0.00|   0.00|   0.00|   0.00|   0.00|
         |   0.55|   0.13|   0.00|   0.00|   0.00|   1.16|   0.00|   0.00|   0.00|   0.00|   0.00|
---------+-------+-------+-------+-------+-------+-------+-------+-------+-------+-------+-------+
Total         364     777     394     316     167      86      58      32      16      12      44   2266
            16.06   34.29   17.39   13.95    7.37    3.80    2.56    1.41    0.71    0.53    1.94 100.00
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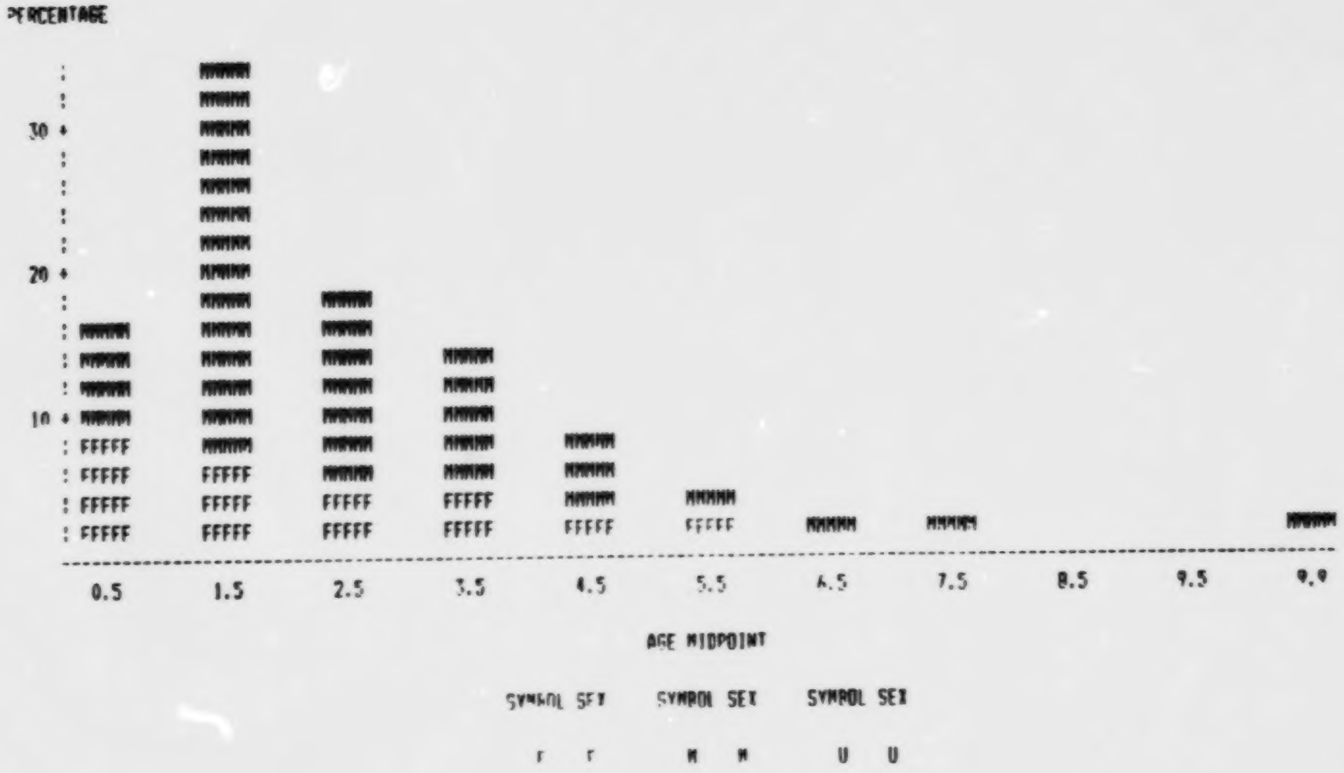

Figure 3. Sex and age composition of the 1987 Saskatchewan white-tailed harvest from lower jaw samples.

Table 10. Percent harvest by age class of white-tailed deer from lower jaw samples collected by the department and the Saskatchewan Wildlife Federation, 1984 to 1987.

Age Class	1984 S.E. Sask.	1985 S.E. Sask.	1986 S.E. Sask.	1987 S.E. Sask.	Province
% fawns	15%	21%	24%	14%	16%
% yearlings	27%	18%	28%	34%	35%
% mature bucks*	38%	26%	29%	37%	36%
% mature females*	20%	35%	20%	14%	13%
% adult deer**	58%	61%	48%	52%	49%
# samples	972	520	685	487	2218

* includes age classes 2.5+ years
** includes adult males and females 2.5+ years

Note: Samples from 1984 to 1986 are from southeastern Saskatchewan only; 1987 samples are from the entire province; 1984 to 1985 samples were collected at department check stations; 1986 and 1987 samples include jaws collected by the Saskatchewan Wildlife Federation.

1985. Mature deer in the 2.5+ year age classes comprise 52% versus 48% in 1986 and 61% in 1985. It is believed that as populations improve and more preferred yearling and mature buck age class animals become available to the sport hunter, they tend to shoot fewer fawns and does, regardless of their abundance in the population. The data suggest significantly higher recruitment into the yearling age classes primarily as a result of milder winter conditions. Harvest information from southeastern Saskatchewan, WMZ 15 to 17 and 31 to 34 combined, is similar to the provincial harvest structure (Table 11, Figure 4).

4. Archery

- With the new one licence system introduced in 1987, the number of archery and muzzleloader hunters and their corresponding harvest had to be estimated from hunter questionnaire data retrieved from all whitetail hunters. The information, therefore, represents rough estimates only and caution should be used when comparing the information to previous years.
- Provincially, 2,146 archery hunters harvested 554 deer for a success rate of 26% compared to 1,253 hunters who harvested 246 deer for a success rate of 19% in 1986 (Tables 12 to 14). Archers required an average of 19 days to make a kill compared to 36 days in 1986. The archery harvest structure was 2.42 bucks/doe/0.44 fawns, higher than the 1.17 bucks/doe/0.21 fawns in 1986. The Grassland zones received the heaviest harvest pressure. Archery hunters accounted for 7% of the total days spent in the field by all whitetail hunters in 1987.
- With a 70% increase in active hunters and a substantial increase in harvest, it appears that hunters, who may have traditionally been rifle hunters, participated in the earlier archery season, knowing that they could hunt in either the muzzleloader or rifle seasons in order to fill their tag. This strategy was extremely popular for all groups, because it gave the hunter more recreation opportunity without additional licencing costs (archery hunter didn't have to purchase another licence to hunt in both seasons). Although more deer were harvested in both the archery and muzzleloader seasons in 1987, overall whitetail harvest was not adversely affected. It is

Table 11. Sex and age composition of the 1987 white-tailed deer harvest in WMZ 15 to 17 and 31 to 34 from lower jaw samples.

SEX AGE

Frequency Percent Row Pct Col Pct	0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5	9.9	Total
FEMALE	35	42	15	17	11	9	7	5	2	4	4	151
	7.09	8.50	3.04	3.44	2.23	1.82	1.42	1.01	0.40	0.81	0.81	30.57
	23.18	27.81	9.93	11.26	7.28	5.96	4.64	3.31	1.32	2.65	2.65	
	50.72	25.00	18.07	21.79	29.73	40.91	53.85	55.56	66.67	66.67	66.67	
MALE	34	126	68	61	26	12	6	4	1	2	2	342
	6.88	25.51	13.77	12.35	5.26	2.43	1.21	0.81	0.20	0.40	0.40	69.23
	9.94	36.84	19.88	17.84	7.60	3.51	1.75	1.17	0.29	0.58	0.58	
	49.28	75.00	81.93	78.21	70.27	54.55	46.15	44.44	33.33	33.33	33.33	
UNKNOWN	0	0	0	0	0	1	0	0	0	0	0	1
	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.20
	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	4.55	0.00	0.00	0.00	0.00	0.00	
Total	69	168	83	78	37	22	13	9	3	6	6	494
	13.97	34.01	16.80	15.79	7.49	4.45	2.63	1.82	0.61	1.21	1.21	100.00

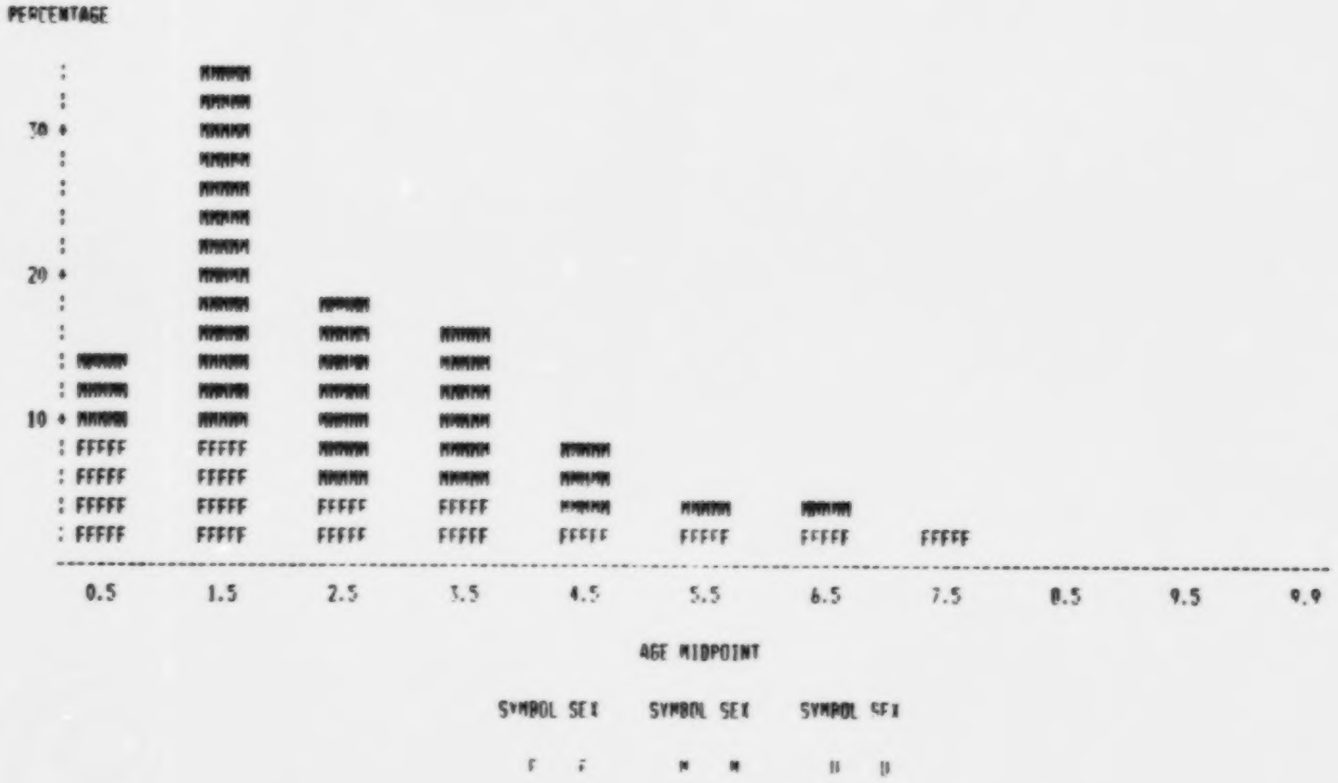

Figure 4. Sex and age composition of the 1987 white-tailed deer harvest in WMZ 15 to to 17 and 31 to 34 from lower jaw samples.

Table 12. Grassland and Farmland white-tailed deer archery harvest, 1987.

Species = 1A1 White-Tailed Deer, Archery   Ecological Division = 1 Grassland

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure	>---		Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
						Males	Females	Young			
01	29	44	4	13.79	4	3.70	1	0.00	116	29.00	0.0139
02	54	81	11	20.37	11	7.40	1	3.70	275	25.00	0.0258
03	10	15	0	0.00	0	0.00	1	0.00	37	0.00	0.0086
04	29	44	7	24.14	7	7.40	1	0.00	159	22.71	0.0195
05	37	56	7	18.92	7	7.40	1	0.00	155	22.14	0.0259
06	52	78	4	7.69	4	0.00	1	0.00	237	59.25	0.0564
07	10	15	0	0.00	0	0.00	1	0.00	44	0.00	0.0232
08	15	22	7	46.67	7	3.70	1	3.70	70	10.00	0.0206
09	47	70	30	63.83	30	0.60	1	0.00	202	6.73	0.0588
10	76	115	19	25.00	19	0.67	1	0.00	405	21.32	0.1142
11	2	4	0	0.00	0	0.00	1	0.00	7	0.00	0.0071
12	59	89	11	18.64	11	0.50	1	0.00	329	29.91	0.9563
13	86	130	19	22.09	19	1.00	1	0.50	438	23.05	0.1072
14	147	222	59	40.14	59	2.25	1	0.75	880	14.92	0.1577
Total	654	984	178	27.22	178	1.47	1	0.35	3,356	18.85	0.0517

Species = 1A1 White-Tailed Deer, Archery   Ecological Division = 2 Farmland

WMZ	# Actual Hunters	# Zone Hunters	# Succ Hunters	% Hunter Success	Harvest	---< Harvest Structure	>---		Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
						Males	Females	Young			
15	12	19	4	33.33	4	3.70	1	0.00	58	14.00	0.0083
16	17	26	0	0.00	0	0.00	1	0.00	56	0.00	0.0105
17	34	52	15	44.12	15	2.00	1	1.00	155	10.33	0.0405
18	54	81	11	20.37	11	11.10	1	0.00	307	27.91	0.0412
19	44	67	11	25.00	11	2.00	1	0.00	192	17.45	0.0208
20	123	185	22	17.89	22	2.00	1	0.00	664	30.18	0.1199
21	61	93	11	18.03	11	11.10	1	0.00	403	36.64	0.0480
22	12	19	0	0.00	0	0.00	1	0.00	44	0.00	0.0092
23	61	93	11	18.03	11	11.10	1	0.00	324	29.45	0.0564
24	34	52	11	32.35	11	11.10	1	0.00	230	20.91	0.0476
25	12	19	4	33.33	4	3.70	1	0.00	52	13.00	0.0089
26	22	33	11	50.00	11	0.50	1	0.00	85	7.73	0.0192
27	20	30	11	55.00	11	0.00	1	2.00	100	9.09	0.0203
28	7	11	4	57.14	4	3.70	1	0.00	30	7.50	0.0221
29	47	70	7	14.89	7	7.40	1	0.00	255	36.43	0.0478
30	165	248	52	31.52	52	12.00	1	1.00	898	17.27	0.1238
Total	727	1,095	185	25.45	185	4.75	1	0.50	3,850	20.81	0.0423

Table 13. Parkland and Forest Fringe white-tailed deer archery harvest, 1987.

Species = 1A1 White-Tailed Deer, Archery — Ecological Division = 3 Parkland

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
31	42	56	22	52.38	22	0.25	1	0.25	207	9.41	0.0820
32	14	19	7	50.00	7	7.40	1	0.00	56	8.00	0.0200
33	22	30	4	18.18	4	3.70	1	0.00	118	29.50	0.0303
34	34	44	7	20.59	7	1.00	1	0.00	130	18.57	0.0241
35	8	11	0	0.00	0	0.00	1	0.00	59	0.00	0.0225
36	11	15	0	0.00	0	0.00	1	0.00	41	0.00	0.0079
37	70	93	19	27.14	19	3.00	1	1.00	437	23.00	0.0386
38	6	7	0	0.00	0	0.00	1	0.00	33	0.00	0.0051
39	39	52	15	38.46	15	2.00	1	1.00	207	13.80	0.0272
41	45	59	4	8.89	4	3.70	1	0.00	232	58.00	0.0321
42	22	30	0	0.00	0	0.00	1	0.00	74	0.00	0.0099
43	22	30	4	18.18	4	3.70	1	0.00	81	20.25	0.0119
44	31	41	4	12.90	4	3.70	1	0.00	133	33.25	0.0290
45	34	44	0	0.00	0	0.00	1	0.00	133	0.00	0.0173
46	36	48	4	11.11	4	0.00	1	0.00	159	39.75	0.0266
47	22	30	0	0.00	0	0.00	1	0.00	121	0.00	0.0211
Total	459	607	89	19.39	89	1.53	1	0.38	2,221	24.96	0.0225

Species = 1A1 White-Tailed Deer, Archery — Ecological Division = 4 Forest Fringe

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
48	12	19	0	0.00	0	0.00	1	0.00	56	0.00	0.0221
49	2	4	0	0.00	0	0.00	1	0.00	15	0.00	0.0062
50	12	19	4	33.33	4	3.70	1	0.00	70	17.50	0.0210
51	25	37	4	16.00	4	3.70	1	0.00	115	28.75	0.0400
52	12	19	4	33.33	4	3.70	1	0.00	41	10.25	0.0140
53	15	22	0	0.00	0	0.00	1	0.00	70	0.00	0.0252
54	27	41	4	14.81	4	0.00	1	0.00	144	36.00	0.0252
55	7	11	4	57.14	4	3.70	1	0.00	44	11.00	0.0117
Total	115	170	19	16.52	19	4.00	1	0.00	555	29.21	0.0211

Table 14. Forest 1st and 2nd licence white-tailed deer archery harvest, 1987.

Species = 1A1 White-Tailed Deer, Archery — Ecological Division = 5 Forest

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
56	15	19	7	46.67	7	1.00	1	0.00	56	8.00	0.0118
57	12	15	4	33.33	4	3.70	1	0.00	74	18.50	0.0223
58	3	4	4	100.00	4	3.70	1	0.00	15	3.75	0.0066
59	24	30	11	45.83	11	2.00	1	0.00	108	9.82	0.0184
60	9	11	7	77.78	7	7.40	1	0.00	20	2.86	0.0052
62	3	4	4	100.00	4	3.70	1	0.00	7	1.75	0.0018
63	6	7	7	100.00	7	0.00	1	1.00	7	1.00	0.0012
64	3	4	0	0.00	0	0.00	1	0.00	11	0.00	0.0031
65	3	4	0	0.00	0	0.00	1	0.00	15	0.00	0.0023
66	3	4	0	0.00	0	0.00	1	0.00	7	0.00	0.0006
67	33	41	4	12.12	4	0.00	1	3.70	118	29.50	0.0136
68	6	7	0	0.00	0	0.00	1	0.00	30	0.00	0.0072
69	3	4	0	0.00	0	0.00	1	0.00	22	0.00	0.0028
Total	122	152	48	39.34	48	2.67	1	0.67	491	10.23	0.0029

Species = 1A2 White-Tailed Deer, Archery — Ecological Division = 5 Forest

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
56	10	11	4	40.00	4	0.00	1	0.00	33	8.25	0.0069
57	7	7	4	57.14	4	3.63	1	0.00	29	7.25	0.0087
59	14	15	7	50.00	7	7.26	1	0.00	27	3.86	0.0046
60	7	7	4	57.14	4	0.00	1	0.00	33	8.25	0.0086
66	7	7	0	0.00	0	0.00	1	0.00	16	0.00	0.0014
67	17	18	11	64.71	11	7.26	1	3.63	35	3.18	0.0040
69	7	7	7	100.00	7	3.63	1	3.63	29	4.14	0.0037
Total	69	73	36	52.17	36	3.00	1	1.00	202	5.61	0.0012

apparent that severe weather conditions during the rifle season or an increase in licence fees has the potential to impact harvest to a greater degree than liberalizing regulations for the primitive weapon seasons.

5. Muzzleloader
   - The same licencing change introduced in 1987 for archery hunters also applies to muzzleloader hunters. Previously, muzzleloader hunters were not allowed to purchase another licence if they wished to hunt in the rifle or archery seasons. Analysis of the data is subject to the same limitations.
   - Provincially, 1,451 muzzleloader hunters harvested 536 deer for a success rate of 37% in 1987 compared to 580 active hunters who harvested 277 deer for a success rate of 48% in 1986 (Tables 15 to 17). Muzzleloaders required an average of 10 days to make a kill compared to 9 days in 1986, 19 days for archers and 5 days for regular rifle hunters. The Grassland zones received the heaviest muzzleloader harvest pressure. The harvest structure was 1.68 bucks/doe/0.22 fawns compared to 0.97 bucks/doe/0.30 fawns in 1986. Muzzleloader hunters accounted for 3% of the total days spent in the field by all whitetail hunters in 1987.
   - Based on a 142% increase in active hunters and a 94% increase in harvest, it is apparent that traditional rifle or archery hunters took the opportunity to hunt in the muzzleloader season because of the licencing system change.

6. Antlerless Season
   - Antlerless licences were available for purchase in WMZ 2 and 6 by 200 and 500 mule deer licence holders, respectively, and to archery and muzzleloader hunters in a special sub-zone within WMZ 11 and 14, along the Saskatchewan River from Highway No. 21 to the Alberta border. These seasons were implemented to prevent the deer population from expanding beyond levels tolerable to landowners or levels that were not manageable under the present either-sex hunting regime.

Table 15. Grassland and Farmland white-tailed deer muzzleloader harvest, 1987.

Species = 1M1 White-Tailed Deer, Muzzleloading Ecological Division = 1 Grassland

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
01	31	41	7	22.58	7	1.00	1	0.00	85	12.14	0.0102
02	22	30	7	31.82	7	3.70	1	3.70	44	6.29	0.0041
04	8	11	4	50.00	4	0.00	1	0.00	33	8.25	0.0040
05	20	26	15	75.00	15	3.00	1	0.00	72	4.80	0.0120
06	28	37	0	0.00	0	0.00	1	0.00	81	0.00	0.0193
07	3	4	0	0.00	0	0.00	1	0.00	7	0.00	0.0036
08	3	4	0	0.00	0	0.00	1	0.00	15	0.00	0.0044
09	28	37	4	14.29	4	3.70	1	0.00	41	10.25	0.0119
10	25	33	7	28.00	7	7.40	1	0.00	59	8.43	0.0166
11	11	15	4	36.36	4	3.70	1	0.00	33	8.25	0.0335
12	3	4	0	0.00	0	0.00	1	0.00	7	0.00	0.0203
13	36	48	7	19.44	7	0.00	1	1.00	85	12.14	0.0208
14	84	111	48	57.14	48	0.22	1	0.22	278	5.79	0.0498
Total	303	400	104	34.32	104	0.85	1	0.31	841	8.09	0.0129

Species = 1M1 White-Tailed Deer, Muzzleloading Ecological Division = 2 Farmland

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
15	12	15	7	58.33	7	3.70	1	3.70	44	6.29	0.0065
16	6	7	0	0.00	0	0.00	1	0.00	11	0.00	0.0020
17	6	7	0	0.00	0	0.00	1	0.00	7	0.00	0.0018
18	21	26	19	90.48	19	4.00	1	0.00	76	4.00	0.0102
19	27	33	0	0.00	0	0.00	1	0.00	81	0.00	0.0087
20	164	204	70	42.68	70	2.00	1	0.17	562	8.03	0.1015
21	21	26	4	19.05	4	3.70	1	0.00	93	23.25	0.0110
22	15	19	0	0.00	0	0.00	1	0.00	37	0.00	0.0078
23	27	33	4	14.81	4	0.00	1	0.00	107	26.75	0.0186
24	33	41	11	33.33	11	11.10	1	0.00	89	8.09	0.0184
25	9	11	0	0.00	0	0.00	1	0.00	30	0.00	0.0051
26	15	19	7	46.67	7	7.40	1	0.00	22	3.14	0.0049
27	24	30	22	91.67	22	22.20	1	0.00	81	3.68	0.0164
28	27	33	22	81.48	22	1.00	1	0.00	78	3.55	0.0575
29	63	78	15	23.81	15	1.00	1	0.00	307	20.47	0.0575
30	173	215	59	34.10	59	1.67	1	0.00	718	12.17	0.0990
Total	640	796	241	37.66	241	2.32	1	0.11	2,345	9.73	0.0258

Table 16. Parkland and Forest Fringe white-tailed deer muzzleloader harvest, 1987.

Species = 1M1 White-Tailed Deer, Muzzleloading Ecological Division = 3 Parkland

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
31	17	22	7	41.18	7	3.70	1	3.70	70	10.00	0.0277
32	12	15	4	33.33	4	0.00	1	0.00	41	10.25	0.0146
33	15	19	11	73.33	11	1.00	1	1.00	59	5.36	0.0151
34	9	11	0	0.00	0	0.00	1	0.00	22	0.00	0.0040
35	17	22	4	23.53	4	3.70	1	0.00	89	22.25	0.0340
36	15	19	4	26.67	4	3.70	1	0.00	67	16.75	0.0129
37	49	63	19	38.78	19	4.00	1	0.00	200	10.53	0.0176
38	12	15	4	33.33	4	0.00	1	3.70	52	13.00	0.0081
39	12	15	4	33.33	4	3.70	1	0.00	56	14.00	0.0073
40	6	7	0	0.00	0	0.00	1	0.00	33	0.00	0.0060
41	35	44	11	31.43	11	0.00	1	0.00	141	12.82	0.0195
42	23	30	4	17.39	4	3.70	1	0.00	96	24.00	0.0129
43	12	15	11	91.67	11	0.00	1	0.00	63	5.73	0.0092
44	26	33	7	26.92	7	7.40	1	0.00	89	12.71	0.0194
45	29	37	7	24.14	7	7.40	1	0.00	144	20.57	0.0187
46	32	41	19	59.38	19	0.33	1	0.33	152	8.00	0.0255
47	6	7	0	0.00	0	0.00	1	0.00	19	0.00	0.0033
Total	326	414	115	35.28	115	1.25	1	0.33	1,391	12.10	0.0141

Species = 1M1 White-Tailed Deer, Muzzleloading Ecological Division = 4 Forest Fringe

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
48	3	4	0	0.00	0	0.00	1	0.00	4	0.00	0.0015
49	3	4	4	100.00	4	0.00	1	0.00	7	1.75	0.0029
50	11	15	4	36.36	4	3.70	1	0.00	37	9.25	0.0111
51	3	4	0	0.00	0	0.00	1	0.00	15	0.00	0.0052
52	14	19	7	50.00	7	1.00	1	0.00	67	9.57	0.0230
54	25	33	0	0.00	0	0.00	1	0.00	100	0.00	0.0175
55	8	11	4	50.00	4	0.00	1	3.70	15	3.75	0.0040
Total	67	89	19	28.36	19	1.00	1	0.50	244	12.84	0.0092

Table 17. Forest 1st and 2nd licence white-tailed deer muzzleloader harvest, 1987.

Species = 1M1 White-Tailed Deer, Muzzleloading   Ecological Division = 5 Forest

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
56	8	11	11	100.00	11	2.00	1	0.00	26	2.36	0.0055
57	6	7	7	100.00	7	1.00	1	0.00	30	4.29	0.0090
59	22	30	19	86.36	19	4.00	1	0.00	137	7.21	0.0233
62	8	11	0	0.00	0	0.00	1	0.00	26	0.00	0.0069
63	11	15	4	36.36	4	3.70	1	0.00	48	12.00	0.0084
64	3	4	0	0.00	0	0.00	1	0.00	19	0.00	0.0053
66	3	4	0	0.00	0	0.00	1	0.00	11	0.00	0.0009
67	20	26	7	35.00	7	1.00	1	0.00	71	10.14	0.0081
68	6	7	0	0.00	0	0.00	1	0.00	37	0.00	0.0088
69	3	4	0	0.00	0	0.00	1	0.00	4	0.00	0.0005
Total	90	118	48	53.33	48	2.25	1	0.00	407	8.48	0.0024

Species = 1M2 White-Tailed Deer, Muzzleloading   Ecological Division = 5 Forest

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
56	6	7	0	0.00	0	0.00	1	0.00	22	0.00	0.0046
59	6	7	4	66.67	4	3.63	1	0.00	29	7.25	0.0049
67	10	11	7	70.00	7	7.26	1	0.00	34	4.86	0.0039
69	3	4	0	0.00	0	0.00	1	0.00	18	0.00	0.0023
Total	25	29	11	44.00	11	10.89	1	0.00	103	9.36	0.0006

- In WMZ 2 and 6, only 32% of the mule deer hunters, compared to 50% in 1986, purchased the antlerless licence, harvesting 169 deer for a success rate of 74% (Table 18). Hunters spent 467 days in the field, a decline of 79% from 1986. Despite good weather and whitetail populations, most hunters either did not wish to spend the extra money for another licence or were no longer receptive to shooting antlerless deer.
- In WMZ 11 and 14, only 46 archery and muzzleloader hunters purchased an antlerless licence, harvesting 26 deer for a success rate of 57% (Table 18). The hunters spent 126 days in the field, hunting with both their regular either-sex and the special antlerless licence. Although hunter densities were of initial concern, the remote geographical location of the special zone (long distance to travel from the major population centers) and difficulty in hunting in thick vegetation associated with the river ecosystem, did not attract large numbers of hunters and the special primitive weapon antlerless hunt was not effective in stabilizing the population.

B. POPULATION STATUS

1. Density: Quadrat Aerial Surveys

- The 1987-88 quadrat aerial survey effort was reduced from previous years due to minimal snow cover throughout southern Saskatchewan. Completed surveys produced densities with standard error estimates not exceeding 20%, except for those surveys designed specifically for moose or elk inventory (Table 19).
- Although no surveys were conducted in southeastern Saskatchewan, field reports and preseason deer observations suggest that deer populations are increasing, but that overall densities, with the exception of WMZ 31, remain below normal. Even though the extremely mild conditions this past winter are expected to produce an above average fawn crop, the shortage of critical wintering habitat appears to be the major factor limiting population growth. A succession of mild winters may result in continued growth of whitetail populations in these zones, but the habitat shortage will subject this population to high mortality in severe winters.

Table 18. Grassland antlerless white-tailed deer rifle harvest, 1987.

Species = 1X1 White-Tailed Deer, Antlerless   Ecological Division = 1 Grassland

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
02	75	75	54	72.00	54	0.00	1	0.78	148	2.74	0.0139
06	150	150	115	76.67	115	0.02	1	0.54	319	2.77	0.0760
11	3	3	1	33.33	1	0.00	1	1.32	8	8.00	0.0081
14	43	44	25	58.14	25	0.00	1	0.58	118	4.72	0.0211
Total	271	272	195	71.96	195	0.01	1	0.62	593	3.04	0.0091

Table 19. White-tailed deer population estimates based on stratified random block aerial survey sampling, 1979-1985

Survey Block	WMZ	Survey Area km²	Survey Block Population Estimate/Year							
			1979-82		1982-83		1983-84		1984-85	
			± 95% CI*	Deer/ km²	± 95% CI	Deer/ km²	± 95% CI	Deer/ km²	± 95% CI	Deer/ km²
Alida	32	1492	---	---	5495±16%	3.7	---	---	2892±24%	1.9±0.5
Bronson Forest**	68	3186	---	---	---	---	---	---	---	---
Cumberland South**	60	---	---	---	---	---	---	---	---	---
Duck Mountain**	37	479	---	---	382±24%	0.8	---	---	---	---
Dundurn	21 & 30	1480	---	---	---	---	---	---	1175±16%	0.8±0.1
Eastend	6	1370	---	---	---	---	---	---	---	---
Forest Fringe	50,51,62, 63,64	4311	---	---	---	---	562±63%	0.13	---	---
Fort a la Corne***	50									
Kipling	33	1494	---	---	513±18%	0.4	---	---	---	---
Last Mtn. Lake	21	2505	---	---	---	---	---	---	559±32%	0.2±0.07
Manitou	46	2129	---	---	2325±17%	1.1	---	---	2392±17%	1.1±0.02
Marie Hill	46	1119	---	---	808±16%	0.7	---	---	---	---
Melville	37	5885	---	---	---	---	---	---	1988±10%	0.4±0.03
Moose Mtn.**	33	681	1691±18%	2.5	1670±18%	2.5	1303±16%	1.9	1118±33%	1.6±0.5
Moosomin	34	932	---	---	1432±8%	1.6	---	---	974±29%	1.0±0.3
Parkerview	39	1678	---	---	2470±14%	1.5	---	---	2227±14%	1.3±0.2
Parkman	34	1865	---	---	2462±54%	1.4	---	---	2107±18%	1.1±0.2
Pleasantdale	41 & 42	2949	1106±10%	0.4	---	---	---	---	963±12%	0.3±0.3
Porcupine Forest**	56,57	---	---	---	---	---	---	---	---	---
Sask. River (Leader)	11 & 14	855	---	---	---	---	---	---	---	---
Sask. River	13 & 14	4994	---	---	---	---	---	---	2494±19%	0.5±0.1
Souris	31 & 32	3149	---	---	---	---	---	---	4051±19%	1.3±0.2
Thickwood Hills West	54	1492	---	---	1093±24%	0.7	---	---	---	---
Val Marie	2	1119	---	---	---	---	---	---	---	---
Wroxton	37	1176	---	---	483±10%	0.4	---	---	1413±21%	1.2±0.3
Yorkton	39	3107	2792±14%	0.9	---	---	---	---	---	---

Confidence intervals on the population estimate.
** Quadrat surveys designed primarily for moose census.
***Quadrat surveys designed primarily for elk census.

Table 19. White-tailed deer population estimates based on stratified random block aerial survey sampling, 1985-1988 (cont.)

Survey Block	WMZ	Survey Area km²	Survey Block Population Estimate/Year					
			1985-86		1986-87		1987-88	
			± 95% CI*	Deer/ km²	± 95% CI	Deer/ km²	± 95% CI	Deer/ km²
Alida	32	1492	1874±11%	1.3±0.1	---	---	---	---
Bronson Forest**	68	3186	---	---	3130±22%	1.0±0.2	---	---
Cumberland South**	60		---	---	809±29%	0.4±0.1	---	---
Duck Mountain**	37	479	---	---	337±28%	0.7±0.2	---	---
Dundurn	21 & 30	1480	---	---	---	---	---	---
Eastend	6	1370	827±18%	0.9±0.1	989±20%	0.7±0.1	---	---
Forest Fringe	50,51,62, 63,64	4311	---	---	---	---	---	---
Fort a la Corne***	50	1404	---	---	---	---	338±30%	0.24±0.07
Kipling	33	1494	---	---	---	---	---	---
Last Mtn. Lake	21	2191	---	---	---	---	760±17%	0.35±0.06
Manitou	46	2129	---	---	2072±20%	1.0±0.2	---	---
Marie Hill	46	1119	---	---	---	---	881±23%	0.79±0.18
Melville	37	5885	---	---	---	---	---	---
Moose Mtn.**	33	681	1122±15%	1.6±0.2	1540±23%	2.3±0.5	---	---
Moosomin	34	932	648±14%	0.7±0.1	---	---	---	---
Parkerview	39	1678	1388±17%	0.8±0.1	---	---	---	---
Parkman	34	1865	1729±14%	0.9±0.1	---	---	---	---
Pleasantdale	41 & 42	2949	1094±21%	0.4±0.1	---	---	---	---
Porcupine Forest**	56,57		---	---	5021±16%	1.4±0.2	---	---
Sask River (Leader)	11 & 14	855	---	---	589±21%	0.7±0.1	---	---
Sask. River	13 & 14	4994					---	---
Souris	31 & 32	3149	---	---	---	---	---	---
Thickwood Hills West	54	1492	---	---	---	---	1083±15%	0.73±0.11
Val Marie	2	1119	---	---	504±14%	0.5±0.07	---	---
Wroxton	37	1176	985±19%	0.8±0.2	699±14%	0.6±0.08	---	---
Yorkton	39	3107	---	---	---	---	---	---

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* Confidence intervals on the population estimate.

** Quadrat surveys designed primarily for moose census.

***Quadrat surveys designed primarily for elk census.

- Southwestern Saskatchewan deer populations have increased in recent years and are expected to continue to expand slowly. Extremely dry range conditions were experienced during the 1988 summer, but it is unknown at this time what impact the drought has had on whitetail fawn survival. Lower reproductive rates, smaller fawn weights and poor fawn survival are often characteristic of an ungulate population subjected to stress from drought conditions.
- The Farmland zones continue to support below normal populations, although two years of mild winter conditions, followed by good fawn survival, have encouraged population growth. Baseline density data, obtained from the Last Mountain Lake quadrat survey (760 ± 17%; 0.35 deer/km^2) in WMZ 21, indicates that densities on prime whitetail habitat are similar to the high density Parkland zones, but less of this type of habitat exists throughout the Farmland ecosystem, resulting in overall lower populations.
- The northern Parkland zones support relatively good whitetail populations. Quadrat aerial surveys conducted on the Marie Hill (881 ±23%; 0.79 deer/km^2) and Thickwood Hill West (1,083 ±15%; 0.73 deer/km^2) survey blocks indicate no change since they were flown in 1982-83. It is interesting to note that these areas supported a higher percentage of the 1987 provincial harvest as a result of hunting restrictions in southern areas. In the eastern Parkland areas, WMZ 37 and 39 continue to be of concern as a result of density data obtained in 1986-87 that indicated a significant decline in the population (Wroxton block; 0.6 deer/km^2). Special harvest strategies will remain in place in these zones in an effort to increase deer densities on under-utilized habitat.
- In the Forest Fringe and Forest ecozones, whitetail populations remain higher than normal as a result of milder temperatures and lower snow depths for the past several winters. Forest deer densities are traditionally lower than agricultural areas of the province and because deer at these latitudes are often subject to high winter mortality, the strategy has been to maintain liberal bag limits during high population years. In 1987-88, the Fort a la Corne elk quadrat survey provided some preliminary densities for white-tailed deer (338 ± 30%; 0.24 deer/km^2), but due to the wide

confidence limits, the estimate is subject to a high degree of error. However, the densities are consistent with the Department's impression that the Forest and Forest Fringe support relatively good deer populations.

2. Population Structure: Preseason Wildlife Observations

- In 1987, 23,817 deer were classified by sex and age compared to 29,040 in 1986 and 13,532 in 1983 when the program was first implemented province-wide (Table 20). Sample sizes declined in all ecological zones, except for the Forest ecozone where improved deer populations helped co-operators obtain more observations. Grassland and Farmland observations declined by 37% and 24%, respectively, but these reductions may simply be the result of fewer participants in the survey or less effort by individuals to collect data and may not be reflective of population levels.
- Preseason productivity estimates, ranging from 87 to 104 fawns/100 does, increased in relation to 1985 and 1986 and are similar to fawn/doe ratios observed in the fall of 1984, prior to the severe 1984-85 winter in southeastern Saskatchewan (Table 20). The highest fawn/doe ratios were recorded in the Forest Fringe (104 fawns/100 does) and Parkland (100 fawns/100 does) zones, followed by the Grassland (96 fawns/100 does), Forest (92 fawns/100 does) and Farmland (87 fawns/100 does) regions. The percentage of does observed with twins increased and the percentage of does observed without fawns declined in 1987 (Table 21). This relationship reflects increased production, probably as a result of an improvement in the nutritional status of does following the mild 1986-87 winter.
- Buck/doe estimates, ranging from 37 to 43 bucks/100 does, remain relatively unchanged from previous years (Table 20). The percent of yearling to mature bucks in the population increased significantly (42% to 55% yearlings in 1987 versus 33% to 49% yearlings in 1986 and 33% to 46% in 1985) in response to better fawn survival following the 1986-87 mild winter (Table 22). With a higher percentage of yearlings in the population in 1987 (similar to 1984) and minimal mortality during the mild 1987-88 winter, there should be a large number of bucks available to the sport hunter during the 1988 hunting

Table 20. Provincial white-tailed deer population structure based on pre-season field observations, Sept. - Nov. 1983 to 1987

Ecological Zone	Males* / 100 Females					Fawns / 100 Females					Sample Sizes (n)				
	1983	1984	1985	1986	1987	1983	1984	1985	1986	1987	1983	1984	1985	1986	1987
GRASSLAND	38	42	33	33	37	107	94	78	88	96	1,858	2,865	2,336	5,134	3,246
FARMLAND	42	39	35	33	39	107	94	87	91	87	2,868	5,525	3,412	6,072	4,599
PARKLAND	42	35	45	44	38	95	104	82	86	100	6,419	6,492	5,322	11,815	9,890
FRINGE	53	40	44	42	41	91	99	83	88	104	1,146	1,329	963	2,419	2,249
FOREST	51	39	46	45	43	82	85	69	80	92	1,241	1,948	1,287	3,600	3,833
ALL ZONES	45	38	40	40	39	99	97	81	87	96	13,532	18,159	13,320	29,040	23,817

*Males/100 Females = Yearling Males + Mature Males + Unclassified Males/Total Females

Table 21. Percentage of whitetail does with and without fawns based on pre-season field observations, Sept. - Nov. 1983 to 1987

% Does With And Without Fawns

Ecological Zone	1983			1984			1985				1986				1987			
	Single	Twins	Triplets	Single	Twins	Triplets	Single	Twins	Triplets	Without Fawns	Single	Twins	Triplets	Without Fawns	Single	Twins	Triplets	Without Fawns
GRASSLAND	53	40	6	44	49	8	56	40	4	47	56	39	5	40	49	47	4	38
FARMLAND	49	47	4	59	38	3	59	37	4	40	55	40	5	39	54	42	4	42
PARKLAND	58	38	4	53	43	3	59	39	2	43	55	41	3	42	50	44	6	35
FRINGE	58	38	4	50	45	5	57	42	1	43	52	46	3	42	47	47	6	35
FOREST	49	49	2	62	35	2	57	42	0	51	52	46	2	47	48	47	5	41
ALL ZONES	54	42	4	56	40	3	58	39	3	44	55	42	4	42	50	45	5	38

Table 22. Percentage of yearling* and mature males** in the provincial white-tailed deer population based on pre-season field observations, Sept. - Nov. 1984 to 1987

Ecological Zone	1984			1985			1986			1987		
	% Yearlings	% Mature	Sample Size (n)	% Yearlings	% Mature	Sample Size (n)	% Yearlings	% Mature	Sample Size (n)	% Yearlings	% Mature	Sample Size (n)
Grassland	53	47	500	46	54	364	49	51	811	55	45	492
Farmland	50	50	928	38	62	527	41	59	887	46	54	778
Parkland	45	55	941	33	67	1054	37	63	2250	42	58	1527
Fringe	49	51	218	34	66	188	33	67	435	47	53	360
Forest	47	53	332	44	56	270	45	55	700	49	51	670
All Zones	48	52	2919	38	62	2403	41	59	5083	46	54	3827

* Antler classes A, B and C

** Antler classes D, E and F

season. All buck/doe ratios are high enough to ensure that prime-age females are being bred in November.

- On an ecozone basis, many individual zones have small sample sizes and the preseason sex-age ratios have to be used with some caution as they may not accurately represent the population structure for that zone. To ensure better accuracy, only those zones with greater than 500 observations (a subjective value based on past experience but with no statistical validity) are used for comparison.
- The Grassland fawn/doe ratios fluctuate considerably, from 84 to 112 fawns/100 does in WMZ 1, 6, 7 and 14, and appear to have increased in 1987, but sample sizes from all zones, except WMZ 14, are smaller than 500 observations (Table 23).
- In the Farmland zones, WMZ 15, 16, 17, 21 and 23 have responded with ratios of 115, 102, 90, 99 and 108 fawns/100 does respectively, indicating normal reproduction and fawn survival (Table 24). These zones are of concern because of declining populations following the severe 1984-85 winter and previous heavy sport harvests. WMZ 20, with 65 fawns/100 does, has below normal fawn production and survival.
- In the Parkland zones, WMZ 31, 33, 34, 37 and 39 have ratios of 103, 97, 111, 102 and 110 fawns/100 does, indicative of improved production and fawn survival following the mild 1986-87 winter (Table 25). Ratios are now similar to fall 1984, before the severe 1984-85 winter and suggests that overall deer populations are increasing in these areas. There are indications that production and fawn survival in WMZ 40, 42 and 45 are below average, but sample sizes are small.
- Sample sizes in the Forest Fringe and Forest zones, with the exception of WMZ 56 and 57, do not exceed 500 observations (Tables 26 and 27). In WMZ 56 and 57, ratios of 90 and 79 fawns/100 does are slightly higher than 1985 and 1986 and consistent with the Department's impression that deer populations in the northern Forest areas are higher than normal.

Table 23. Grassland white-tailed deer population structure based on pre-season field observations, Sept. - Nov. 1983 to 1987

	Males* / 100 Females					Fawns / 100 Females					Sample Size (n)				
WMZ	1983**	1984	1985	1986	1987	1983	1984	1985	1986	1987	1983	1984	1985	1986	1987
1	34	52	30	29	30	113	107	67	88	87	540	491	279	959	366
2	44	60	34	33	64	143	98	101	97	73	374	462	325	596	289
3	60	50	0	27	25	100	200	133	164	135	13	7	7	32	52
4	36	28	27	24	18	86	63	61	71	119	262	418	543	896	253
5	44	40	36	28	29	56	84	81	90	90	17	227	155	343	210
6	29	55	57	42	39	103	89	90	91	92	143	288	239	621	305
7	38	42	27	37	29	104	99	81	95	112	63	204	172	482	351
8	35	56	36	41	24	117	122	83	87	112	58	24	79	89	137
9	54	17	12	23	71	56	63	53	64	104	101	43	80	105	66
10	47	36	47	66	29	100	116	86	127	82	47	111	100	240	59
11	33	45	8	18	0	127	98	115	129	200	125	124	29	42	3
12	--	--	27	27	43	--	--	109	109	112	--	--	26	25	148
13	34	28	50	39	32	84	129	85	83	127	109	267	141	402	220
14	300	24	40	43	43	100	95	97	94	84	5	199	161	301	787
TOTAL	38	42	33	33	37	107	94	78	88	96	1858	2865	2336	5134	3246

* Males/100 Females = Yearling Males + Mature Males + Unclassified Males/Total Females

** The 1983 numerical values have been changed to correspond with the new WMZ's that were implemented in 1984.

Table 24. Farmland white-tailed deer population structure based on pre-season field observations, Sept. - Nov. 1983 to 1987

WMZ	Males* / 100 Females 1983**	1984	1985	1986	1987	Fawns / 100 Females 1983	1984	1985	1986	1987	Sample Size (n) 1983	1984	1985	1986	1987
15	33	28	25	26	27	121	116	104	108	115	741	400	729	1012	316
16	31	23	35	40	29	131	118	85	95	102	360	319	186	363	395
17	38	49	31	35	35	113	81	79	87	90	366	303	199	337	506
18	61	63	28	31	33	96	148	51	77	93	118	84	70	108	97
19	55	49	48	37	40	102	68	70	74	62	217	627	317	574	237
20	--	37	66	60	50	--	73	74	86	65	--	496	248	379	567
21	--	44	35	33	42	--	105	99	100	99	--	1390	361	833	823
22	55	46	2	43	47	74	156	0	57	119	278	178	3	14	125
23	30	35	27	27	38	95	93	92	102	108	385	1127	970	1522	604
24	0	35	62	44	53	67	59	54	88	65	10	33	28	132	74
25	0	30	33	29	43	88	90	83	71	76	15	22	12	48	46
26	33	32	21	17	58	200	100	89	87	88	10	50	39	61	118
27	100	31	25	23	16	122	95	42	38	45	100	96	19	85	71
28	93	63	53	57	29	129	32	94	139	71	46	40	42	68	14
29	81	60	40	32	48	89	89	59	36	58	73	216	125	225	390
30	43	10	69	46	19	90	73	77	78	79	114	144	64	311	216
TOTAL	42	39	35	33	39	107	94	87	91	87	2868	5525	3412	6072	4599

* Males/100 Females = Yearling Males + Mature Males + Unclassified Males/Total Females

** The 1983 numerical values have been changed to correspond with the new WMZ's that were implemented in 1984.

Table 25. Parkland white-tailed deer population structure based on pre-season field observations, Sept. - Nov. 1983 to 1987

WMZ	Males* / 100 Females					Fawns / 100 Females					Sample Size (n)				
	1983**	1984	1985	1986	1987	1983	1984	1985	1986	1987	1983	1984	1985	1986	1987
31	25	35	24	30	22	96	110	98	102	103	421	325	438	946	1295
32	37	21	37	43	41	97	114	96	94	96	1875	655	388	673	362
33	35	28	34	32	35	99	86	71	73	97	516	354	343	759	560
34	41	47	42	44	40	84	106	72	81	111	623	1054	832	1559	831
35	56	13	66	52	45	99	118	73	83	122	393	370	378	978	736
36	42	20	34	36	58	53	75	66	59	76	86	116	57	119	129
37	50	32	42	38	39	93	102	81	85	102	898	1144	1112	2317	1635
38	55	69	58	61	39	115	113	54	68	112	237	192	125	327	430
39	54	31	57	57	42	96	135	92	112	110	430	375	440	1251	1426
40	35	39	71	69	50	81	74	97	94	74	121	383	166	268	488
41	44	43	50	41	40	88	120	100	104	119	157	333	77	309	311
42	44	28	66	50	41	85	70	63	68	68	151	316	206	524	415
43	58	34	49	46	18	109	95	92	83	85	146	172	123	160	167
44	59	25	67	32	46	117	81	17	64	86	79	65	12	145	130
45	65	42	46	53	37	108	133	83	80	74	210	291	379	804	320
46	100	84	74	51	21	100	99	70	65	87	6	243	66	242	239
47	57	31	40	40	53	112	119	92	86	104	70	104	180	434	416
TOTAL	42	35	45	44	38	95	104	82	86	100	6419	6492	5322	11815	9890

* Males/100 Females = Yearling Males + Mature Males + Unclassified Males/Total Females

** The 1983 numerical values have been changed to correspond with the new WMZ's that were implemented in 1984.

Table 26. Forest Fringe white-tailed deer population structure based on pre-season field observations, Sept. - Nov. 1983 to 1987

WMZ	Males* / 100 Females 1983**	1984	1985	1986	1987	Fawns / 100 Females 1983	1984	1985	1986	1987	Sample Size (n) 1983	1984	1985	1986	1987
48	55	28	50	53	54	56	64	110	116	98	190	102	156	261	290
49	53	35	70	44	32	73	121	91	92	112	67	174	59	446	414
50	65	41	60	53	53	81	97	81	79	107	63	167	169	332	286
51	63	32	38	32	51	123	77	85	79	60	98	46	87	118	158
52	32	23	50	35	43	45	51	75	71	73	39	99	54	99	65
53	60	58	29	40	31	99	96	70	66	78	176	227	188	330	161
54	72	44	36	41	43	100	131	67	90	96	171	425	164	470	415
55	38	40	47	33	34	109	71	109	103	143	342	89	86	363	460
TOTAL	53	40	44	42	41	91	99	83	88	104	1146	1329	963	2419	2249

* Males/100 Females = Yearling Males + Mature Males + Unclassified Males/Total Females

** The 1983 numerical values have been changed to correspond with the new WMZ's that were implemented in 1984.

Table 27. Forest white-tailed deer population structure based on pre-season field observations, Sept. - Nov. 1983 to 1987

WMZ	Males* / 100 Females					Fawns / 100 Females					Sample Size (n)				
	1983**	1984	1985	1986	1987	1983	1984	1985	1986	1987	1983	1984	1985	1986	1987
56	56	27	35	40	40	82	95	82	85	90	262	510	259	728	768
57	50	53	60	49	53	85	74	73	74	79	342	217	191	495	576
58	41	32	42	42	55	119	117	58	79	65	96	132	62	162	112
59	62	49	35	57	69	104	79	89	78	89	124	130	121	235	116
60	18	60	37	42	33	105	57	47	59	116	50	92	103	224	352
61	55	60	57	33	53	76	100	43	73	100	66	26	14	31	38
62	50	0	65	53	40	17	100	41	88	110	10	6	35	123	240
63	145	33	64	55	62	118	102	67	96	114	40	216	130	369	382
64	46	33	64	44	43	23	46	89	79	105	44	113	71	192	285
65	0	0	0	42	0	0	100	0	125	125	1	8	1	32	9
66	38	19	53	48	46	104	53	47	60	83	63	99	132	306	304
67	43	68	33	37	27	114	100	64	76	88	36	212	69	226	307
68	29	54	70	38	33	132	86	140	90	86	73	88	31	180	107
69	150	39	35	44	26	100	94	87	105	75	14	75	51	247	209
70	0	0	0	--	100	0	50	0	--	133	1	3	1	--	10
71	--	--	13	11	33	--	--	38	33	67	--	--	12	13	6
72	0	0	0	0	0	0	200	0	25	40	2	3	1	10	7
73	150	0	2	--	100	100	150	1	--	300	7	10	3	--	5
TOTAL	51	39	46	45	43	92	85	69	80	92	1241	1948	1287	3600	3833

* Males/100 Females = Yearling Males + Mature Males + Unclassified Males/Total Females

** The 1983 numerical values have been changed to correspond with the new WMZ's that were implemented in 1984.

3. Impact of the 1987-88 winter

- This past winter was similar to the 1986-87 winter, in that it was one of the mildest winters on record, particularly throughout southern Saskatchewan. Snow cover was minimal even in February and except for a few cold weeks in January with high wind chill factors, temperatures remained in the -5 to -15 degree Celsius range. Some parts of central and southwestern Saskatchewan were without complete snow cover for most of the winter. A late March blizzard may have caused some temporary problems for wintering deer, but because the snow melted relatively quickly, it is unlikely that those conditions had an adverse impact on deer populations.
- In the northern Parkland and Forest zones, snow depths were deeper, but considered below normal throughout the November to February time period. Several heavy snow falls in March increased precipitation values but had minimal impact on deer populations. Temperature and wind chill were colder in the northern part of the province, but not significantly different from 1986-87 and certainly warmer than the long-term average.
- Necropsy of road-killed deer throughout the winter from all parts of the province showed rates of body and femur fat depletion which were indicative of deer in good physical condition for all age classes. Winter mortality is believed to have been minimal, probably less than 10% of the population, as a consequence of the mild winter weather conditions.
- With mild spring weather and vegetation green-up occuring earlier than normal, production and post-partum fawn survival are expected to be above average in 1988.

4. Management Problems

(a) Despite good production in 1987 and a similar situation anticipated for 1988, below normal populations in parts of southeast (WMZ 16, 17, 32 to 34), east-central (WMZ 37, 38 and 39) and south-central (WMZ 21 to 24) Saskatchewan continue to be of major concern. It is possible, based on low preseason fawn/doe ratios, that WMZ 20, 40, 42 and 45 may be experiencing low production, but the status of the population in these zones is unknown at this time.

- WMZ 16, 17 and 32 to 34 were impacted by the severe 1984-85 winter; the current 3.5 and 4.5 year age cohorts, essentially the prime breeders, were subjected to high mortality as fawns and yearlings and this situation continues to exert a residual depressive influence on populations. WMZ 32 and 34 also continue to experience loss of critical deer habitat and may not be able to sustain high deer densities in the future. Severe winters may then play an amplified role in limiting population growth as a result of this habitat loss.

- WMZ 37 to 39 have unfilled habitat not being used by wintering deer, suggesting that populations could be sustained at a much higher level than currently exists. A variety of factors have contributed to the population decline, including unregulated and sport hunting, winter severity and possibly, recruitment problems. The unusually heavy sport harvest in WMZ 37 and 39 in 1986, caused by a shift of hunters into these zones from southeastern Saskatchewan, did not occur in 1987. Indications are that good fawn survival following the current mild winters and maintenance of restrictive hunting strategies will significantly improve the population status.

- WMZ 21 to 24 have been plagued by a combination of poor production and habitat loss since the late 1970's. WMZ 21, for example, supports high deer densities on the best deer habitat, but little of this type of habitat is available to support high overall deer populations. Under these conditions, even moderate winters have a serious impact on recruitment and population growth.

- WMZ 40 and 42 (Humboldt area) and WMZ 45 (North Battleford area) will have to be monitored closely in 1988-89 to see if a population problem exists. Because these zones have a large habitat base, population problems due to over-hunting or poor production, should be of a short-term nature.

(b) Selective harvest strategies have been implemented in WMZ 2 and 6, 11 and 14, and 37 to 39 in an effort to increase the population by protecting the prime breeders, balance the male:female sex ratio by putting more pressure on one particular segment of the population or reduce the overall population by harvesting more antlerless animals.

- Since 1986, WMZ 2 and 6 mule deer licence holders have had the option of purchasing an antlerless whitetail licence to use during the mule deer season. This strategy has kept pressure on the antlerless component of the population because most either-sex hunters prefer to shoot bucks. Based on field reports and landowner contacts, the antlerless segment of the population in WMZ 2 appears to have been reduced and the harvest strategy is no longer considered necessary. In WMZ 6, high deer numbers still cause depredation problems for local landowners and another antlerless hunt, with licences available to mule deer hunters, is warranted in 1988.

- A special zone in parts of WMZ 11 and 14 was created in 1987 to reduce the overall deer population along the Saskatchewan River, west of Leader. The antlerless licence was available to archery and muzzleloader hunters as a method of controlling hunter numbers in this small area. Low hunter participation and harvests by both groups of hunters indicate that the harvest strategy was unsuccessful and revisions to the season structure have been made for 1988.

- A bucks only season in WMZ 38, in effect since 1984, has helped to reduce the overall whitetail harvest and promote population growth by protecting the prime breeding females. Fawn production has increased significantly and the percentage of does without fawns has declined, primarily as a result of mild winters. Yearling to mature buck ratios are above normal and field reports suggest that populations are starting to recover and utilize unfilled habitat. It appears that the original objectives are working and that seasons could be liberalized in the next few years to permit an either-sex harvest, depending on winter mortality.

- In WMZ 37 and 39, the objective designed to reduce harvest on the adult female segment of the herd, without shifting hunting pressure to other zones, has been partially successful. Good fawn survival and improved yearling to mature buck ratios indicate a growing population, but low overall densities in these zones indicate that the current restrictions should remain in place for the immediate future.

(c) The deer population in WMZ 31 appears to be recovering rapidly since it was not impacted to the same degree by the severe 1984-85 winter as some of the other southeast zones. Field reports suggest that the population, particularly the antlerless component, is similar to the high deer numbers observed in 1984. Mild winter conditions leading to good production and low harvests, primarily the result of hunting restrictions applied on surrounding zones, have contributed to the high deer population. Landowners and residents of the zone consider the population to be too high and recommend an increased sport harvest.

C. 1988 MANAGEMENT OBJECTIVES

(1) Two week either-sex November rifle seasons will be implemented for most zones in the Grassland, Farmland and Parkland ecozones, with the exception of WMZ 37, 38 and 39.

(2) The one week bucks only and one week either-sex harvest strategy in WMZ 37 and 39 and bucks only harvest strategy in WMZ 38, designed to protect breeding females and promote population growth, will continue for 1988.

(3) A special antlerless licence will again be available to 350 mule deer licence holders in WMZ 6 in an effort to reduce antlerless deer populations, balance the herd structure and resolve landowner depredation problems. The antlerless licence available to mule deer licence holders in WMZ 2 last year will be eliminated for 1988.

(4) A special antlerless licence will be implemented in WMZ 11 and 14. Mule deer licence holders from WMZ 11 and 26 will have the option to purchase an antlerless white-tailed deer licence to use during their mule deer hunt. WMZ 14 is not included in this option because there is the danger that mule deer hunting pressure would shift to populations west of Leader, which presently cannot support additional harvest. Primitive weapon hunters will also have the option to shoot an additional antlerless deer during September and October archery and muzzleloader seasons.

(5) Improved deer populations in the eastern half of WMZ 31 warrant special attention. To assist in harvesting the growing antlerless component of the population and balance the herd structure, the department will advertise that additional antlerless recreational opportunity is available in parts of WMZ 31 for 1988. Either-sex hunting, principally for bucks, will continue to be discouraged until sex ratios are balanced and populations return to normal in the surrounding zones.

(6) Deer populations in most Forest zones (WMZ 56 to 69) continue to increase and warrant a two deer bag limit in 1988. With the exception of WMZ 62 to 64, 67 and 68 (late season only) these Forest zones will maintain their early and late season dates. WMZ 70 to 76 will have a one deer bag limit in view of lower and unchanged population densities. The season dates in WMZ 70 to 76 have been changed slightly so that they overlap with the early regular moose seasons.

(7) Primitive weapon hunting will include a two deer bag limit for Saskatchewan residents in WMZ 56 to 69. Canadian residents and non-residents will be offered the opportunity to participate in the archery season in WMZ 56 to 76 with a 1 deer bag limit.

(8) Due to the success and popularity of the one licence system introduced in 1987, either-sex licences will be valid in either the archery, muzzleloader, or rifle season in 1988. Antlerless licences are still viewed as special tags, required for specific harvest strategies on an individual zone basis and subsequently will have to be purchased separately.

D. 1988 WHITE-TAILED DEER SEASON

White-tailed Deer Primitive Weapons (Sask. Residents Only)	Zones 1 to 8, 11 to 55, including Brokenshell No. 1 and No. 2, Elbow, Fort a la Corne, Great Bend, Lemond and Horsehide Lake Wildlife Management Units; Duck Mountain, Moose Mountain and Saskatchewan Landing Provincial Parks	Archery Sept. 3 - Oct. 15 Muzzleloading Rifles Oct. 3 - Oct. 15	one white-tailed deer, either sex	• An unsuccessful archer or muzzleloader hunter may use his unfilled either-sex white-tailed deer licence in all white-tailed deer rifle seasons and the Shotgun-Archery-Muzzleloader areas of Zones 20 and 30. • Archery or muzzleloader hunters may purchase an additional antlerless white-tailed deer licence at department offices, valid only in the specified portion of Zones 11 and 14 during the archery and muzzleloader seasons. See map for details. • Second white-tailed deer either-sex licences are valid only in Zones 56 to 69. A separate licence is required. **Note: The opening date in Duck Mountain, Greenwater Lake, Meadow Lake and Saskatchewan Landing Provincial Parks and Bronson Forest Recreation Site is delayed until September 7.**
	Zones 9 and 10	Archery Sept. 12 - Oct. 15 Muzzleloading Rifles Oct. 3 - Oct. 15	one white-tailed deer, either sex	
	That portion of Zones 11 and 14 along the South Saskatchewan River from Highway No. 21 to the Alberta border	Archery Sept. 3 - Oct. 15 Muzzleloading Rifles Oct. 3 - Oct. 15	one antlerless white-tailed deer	
	Zones 56 to 69, including Leaf Lake Wildlife Management Unit; Greenwater Lake, Meadow Lake and Nipawin Provincial Parks; and Bronson Forest Recreation Site	Archery Sept. 3 - Oct. 15 Muzzleloading Rifles Sept. 19 - Oct. 15	two white-tailed deer, either sex	
	Zones 70 to 76, including Clearwater River and Lac La Ronge Provincial Parks	Archery Sept. 3 - Oct. 15 Muzzleloading Rifles Sept. 19 - Oct. 15	one white-tailed deer, either sex	
White-tailed Deer Archery (Canadian Residents and Non-residents)	Zones 56 to 76, including Leaf Lake Wildlife Management Unit; Clearwater River, Greenwater Lake, Lac La Ronge, Meadow Lake and Nipawin Provincial Parks and Bronson Forest Recreation Site	Sept. 3 - Oct. 15	one white-tailed deer, either sex	• An unsuccessful archer may use his unfilled either-sex white-tailed deer licence in all white-tailed deer seasons open to Canadian Residents and Non-residents. **Note: The opening date in Greenwater Lake and Meadow Lake Provincial Parks and Bronson Forest Recreation Site is delayed until September 7.**
White-tailed Deer (Sask. Residents, Canadian Residents and Non-residents)	Zones 56 to 61, 65, 66 and 69, including Leaf Lake Wildlife Management Unit; and Greenwater Lake, Meadow Lake and Nipawin Provincial Parks	Oct. 3 - Oct. 13 & Nov. 7 - Dec. 3	two white-tailed deer, either sex	• Second white-tailed deer licences are valid only in Zones 56 to 69. A separate licence is required.
	Zones 62 to 64, 67 and 68, including Nipawin Provincial Park and Bronson Forest Recreation Site	Nov. 7 - Dec. 3	two white-tailed deer, either sex	
	Zones 70 to 76, including Clearwater River and Lac La Ronge Provincial Parks	Aug. 29 - Sept. 17 & Nov. 7 - Nov. 26	one white-tailed deer, either sex	
White-tailed Deer (Sask. Residents and Canadian Residents)	Zones 1 to 15, 18 to 30, 38 and 40 to 55, including Brokenshell No. 1 and No. 2, Cookson, Estevan-Cambria, Elbow, Fort a la Corne, Horsehide Lake, Last Mountain Lake and Lemond Wildlife Management Units; and Saskatchewan Landing Provincial Park	Sask. Residents Nov. 21 - Dec. 3 Canadian Residents Nov. 28 - Dec. 3	one white-tailed deer, either sex	**Note: Primitive weapons only in Saskatchewan Landing Provincial Park.** • Portions of Zones 20 and 30 are restricted to shotgun, archery, and muzzleloading rifle hunting only. Please refer to Wildlife Management Zone maps. • Hunters will be restricted to designated trails within the Cookson Wildlife Management Unit. • "Roads and Trails Only". Hunters in Zones 15 to 17, 20 and 28 to 34 must keep vehicles on roads and road allowances with trails. • "Antlered White-tailed Deer" means any deer with an antler or antlers at least 10 centimetres in length as measured from the outside of the skull to the tip. • "Antlerless White-tailed Deer" means a doe or 1988 fawn. • For Zone 6 and the specified portion of Zones 11 and 14, hunters may purchase an additional antlerless white-tailed deer licence at department offices upon proof of possession of a mule deer licence.
	Zones 16, 17 and 31 to 35, including Moose Mountain Provincial Park	Sask. Residents Nov. 21 - Dec. 3	one white-tailed deer, either sex	
	Zone 36	Sask. Residents Nov. 21 - Dec. 3	one antlered white-tailed deer	
	Zones 37 and 39, including Duck Mountain Provincial Park	Sask. Residents Nov. 21 - Nov. 26	one antlered white-tailed deer	
		Sask. Residents Nov. 28 - Dec. 3	one white-tailed deer, either sex	
	Zone 6 (Zone 6 either-sex and antlerless mule deer licence holders only)	Specified mule deer seasons between Nov. 7 and Nov. 19 inclusive	one antlerless white-tailed deer	
	That portion of Zones 11 and 14 along the South Saskatchewan River from Highway No. 21 to the Alberta border (Zones 11 and 14 either-sex and antlerless mule deer licence holders only)	Specified mule deer seasons between Nov. 7 and Nov. 19 inclusive	one antlerless white-tailed deer	

MOOSE

A. REVIEW OF 1987 HUNTING SEASON

1. Licence Sales*

	1981	1982	1983	1984	1985	1986	1987	% Change
Special	2,400	2,034	1,967	1,898	2,105	2,082	2,133	+2%
Regular	10,542	10,212	7,894	8,006	8,125	9,363	8,653	-8%
Archery	----	----	29	41	38	31	43	+39%
Guided	289	282	212	194	239	208	217	+4%
TOTAL	13,232	12,527	10,073	10,165	10,507	11,684	11,046	-5%

* Final (June 1) sale figures; however all data analysis based on figures available in February.

2. Hunting Activity and Harvest

(a) Provincial

- With moderate weather conditions throughout the fall moose seasons, field reports indicate that hunting activity during the early season was higher than normal, but in the late season, poor snow cover and unfrozen creeks and muskegs hampered hunters, causing many of them to leave early or not hunt at all. Traditionally, the majority of the hunting activity in the Commercial Forest occurs during the late special and regular seasons and lower harvest levels were evident in all zones.
- Overall moose licence sales declined 5% to 11,046 in 1987 from 11,684 in 1986. Special licences sales, affected by a fee increase in 1987, actually increased 2% from 1986 and sale of regular licences, that did not change in price, declined. Late season weather conditions are believed to be the major reason for the decrease in hunter activity.

- The hunter questionnaire survey indicated that provincially, active hunters decreased from 10,190 (1986) to 9,671 (1987) and harvest declined from 3,563 (1986) to 3,487 moose (Table 28, Figure 5). Hunter-days of recreation also decreased from 49,348 (1986) to 42,517 (1987) days in response to poor late season hunting conditions in the Commercial Forest zones.
- Hunting activity during the early season remained similar to 1986 with higher success rates in all zones.

(b) Northern Commercial Forest

- For the Forest special seasons (WMZ 55 to 68 and 48, 49 and 56 combined), 2,049 active hunters harvested 1,068 moose, a slight increase from the 1,736 active hunters that harvested 819 moose in 1986 (Table 29). With a 52% success rate, hunter-days increased from 8,380 (1986) to 8,623 (1987).

- In the Forest regular bull-calf seasons (WMZ 56 to 76), active hunters declined from 7,712 (1986) to 7,380 (1987), with a small decrease in the harvest from 2,359 to 2,060 moose (Table 30). An additional 681 active bull-calf hunters harvested 246 moose in the Forest Fringe (WMZ 43, 48, 49, 53 and 55).

(c) Southern Zones

i. Moose Mountain Park (WMZ 33) and Cypress Hills (WMZ 7):
No hunting seasons in 1987.

ii. Cypress Hills (WMZ 6):
The 25 licences issued in WMZ 6 (east block) resulted in the harvest of 14 moose (61% success) and provided 66 recreation days (Table 29).

iii. Thickwood Hills (WMZ 54):
The quota of 100 licences provided 310 hunter-days recreation for 98 hunters with a harvest of 64 moose (Table 29). The moose were harvested in the vicinity of the Royal-Meeting P.F.R.A. pastures, crown land in the Deserter Lake area west of Meeting Lake and along the forest fringe north of Spiritwood.

Table 28. Provincial moose harvest according to licence type, 1984 to 1987*

Licence	1984	1985	1986	1987
Either-sex Special (Draw)	821	653	910	1068
Regular (Bull-Calf)	2371	1413	2554	2306
Archery (Either-sex)	3	2	6	5
Guided (Bull-Calf)	90	90	93	108
TOTAL	3285	2158	3563	3487
% Hunter Success	37%	22%	34%	36%

*Harvest figures do not include a small number of big game permits issued free to northern trappers who reside on traplines for long periods of time.

Figure 5. Estimated provincial hunter success and harvest pressure during the moose season, 1959-1987

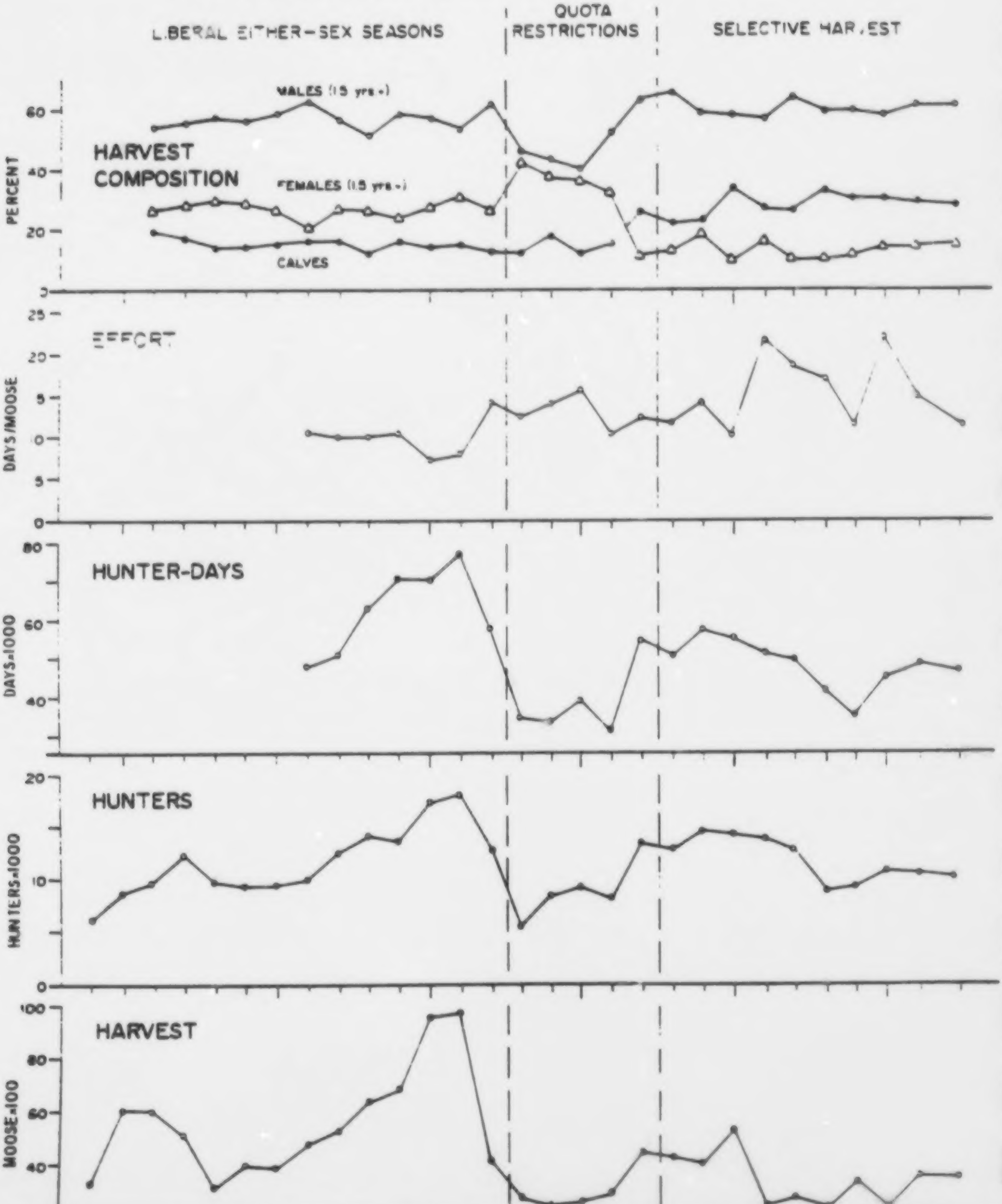


Table 29. Special either-sex moose harvest by WMZ, 1987.

Species = 301 Moose, Special						Ecological Division					
WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	< Harvest Structure > Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/WMZ In Zone
06	23	23	14	60.87	14	1.17	1	0.00	66	4.71	0.0157
37	81	81	33	40.74	33	1.11	1	0.33	320	9.70	0.0282
48	333	333	216	64.86	216	0.69	1	0.24	1,464	6.78	0.5784
50	95	95	29	30.53	29	1.14	1	0.14	424	14.62	0.1272
54	99	99	64	64.65	64	0.58	1	0.53	310	4.84	0.0544
57	198	198	130	65.66	130	0.88	1	0.33	809	6.22	0.2445
58	198	198	78	39.39	78	1.60	1	0.33	910	11.67	0.4053
59	393	393	194	49.36	194	1.33	1	0.35	1,713	8.83	0.2922
60	196	196	91	46.43	91	0.74	1	0.65	834	9.16	0.2173
61	101	101	38	37.62	38	1.86	1	0.57	389	10.24	0.1279
62	44	44	17	38.64	17	1.00	1	0.25	184	10.82	0.0492
67	150	150	80	53.33	80	1.00	1	0.28	696	8.70	0.0802
68	138	138	84	60.87	84	0.91	1	0.50	506	6.02	0.1216
Total	2,049	2,049	1,068	52.1%	1,068				8,625		

Table 30. Regular bull-calf harvest by WMZ, 1987.

Species = 3R1 Moose, Regular — Ecological Division

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
43	76	98	22	28.95	22	3.00	1	2.00	275	12.50	0.0405
48	148	192	40	27.03	40	25.34	1	14.48	728	18.20	0.2876
49	244	315	101	41.39	101	47.06	1	54.30	845	8.37	0.3528
53	76	98	25	32.89	25	14.48	1	10.86	300	12.00	0.1082
55	137	177	58	42.34	58	39.82	1	18.10	506	8.72	0.1349
56	1,238	1,546	445	35.95	445	311.32	1	133.94	5,939	13.35	1.2563
57	948	1,184	272	28.69	272	173.76	1	97.74	4,512	16.59	1.3639
58	325	405	65	20.00	65	43.44	1	21.72	1,346	20.71	0.5995
59	1,197	1,495	344	28.74	344	271.50	1	72.40	5,738	16.68	0.9788
60	496	619	134	27.02	134	76.02	1	57.92	2,556	19.07	0.6661
61	154	192	40	25.97	40	28.96	1	10.86	724	18.10	0.2381
62	168	210	33	19.64	33	21.72	1	10.86	730	22.12	0.1954
63	180	224	36	20.00	36	9.00	1	0.00	811	22.53	0.1433
64	52	65	18	34.62	18	14.48	1	3.62	217	12.06	0.0612
65	52	65	4	7.69	4	3.62	1	0.00	239	59.75	0.0366
66	284	355	87	30.63	87	61.54	1	25.34	1,234	14.18	0.1093
67	803	1,003	297	36.99	297	220.82	1	76.02	3,835	12.91	0.4420
68	348	434	152	43.68	152	90.50	1	61.54	1,548	10.18	0.3722
69	180	224	65	36.11	65	54.30	1	10.86	691	10.63	0.0891
70	58	72	11	18.97	11	7.24	1	3.62	224	20.36	0.0263
71	29	36	11	37.93	11	10.86	1	0.00	123	11.18	0.0068
72	81	101	18	22.22	18	14.48	1	3.62	282	15.67	0.0153
73	61	76	7	11.48	7	7.24	1	0.00	203	29.00	0.0044
74	28	36	14	50.00	14	14.48	1	0.00	116	8.29	0.0025
75	3	4	0	0.00	0	0.00	1	0.00	22	0.00	0.0003
76	14	18	7	50.00	7	7.24	1	0.00	43	6.14	0.0005
Total	7,380	9,244	2,306	31.2%	2,306				33,787		

iv. Fort a la Corne WMU (WMZ 50):
The quota of 100 licences provided 424 hunter-days recreation for 95 hunters with a harvest of 29 moose, a small decrease from 1986 (Table 29).

v. Duck Mountain Park (WMZ 37):
The quota of 100 licences provided 320 hunter-days recreation for 80 hunters with a harvest of 33 moose, a small decline from 1986 (Table 29).

vi. Greenwater Park (WMZ 56):
The hunter activity and harvest information for Greenwater Park was combined with WMZ 56 in the hunter questionnaire survey analysis and could not be separated for 1987. In 1986, the quota of 50 licences attracted 43 hunters for a harvest of 9 moose (21% success), providing 181 recreation days; 1987 hunting statistics are thought to be similar.

vii. Archery Season (WMZ 68):
In 1987, 50 and 100 licences were available to archery hunters in WMZ 55 and 68 combined and 37 (including Duck Mountain Park), respectively. The WMZ 37 season was new for 1987 and designed to provide archers with moose hunting opportunity on the east side of the province. The 25 hunters who hunted in the two zone options, harvested 5 moose for a 25% success rate, providing 109 recreation days.

3. Harvest Structure

(a) Hunter Questionnaire Survey

- The provincial harvest structure was estimated to be 4.36 bulls/cow/1.83 calves, with bulls, cows and calves comprising 61%, 14% and 25% of the harvest, respectively (Table 31). More cows and fewer calves were harvested in 1987, but an increase in the special either-sex quotas provided hunters with more opportunity to shoot females. In the Forest ecozone, where the majority of the harvest takes place, the bull/cow/calf percentages were similar to 1986 and the long-term trend in harvest structure, since selective harvest strategies were introduced in 1977.

Table 31. Provincial moose harvest structure*, 1984-1987

EZONE	1984 MALES	1984 FEMALES	1984 YOUNG	1985 MALES	1985 FEMALES	1985 YOUNG	1986 MALES	1986 FEMALES	1986 YOUNG	1987 MALES	1987 FEMALES	1987 YOUNG
GRASSLAND	0.00	1	0.00	0.00	1	0.00	0.50	1	1.25	1.14	1	0.00
FARMLAND	0.00	1	0.00	0.00	1	0.00	0.00	1	0.00	0.00	1	0.00
PARKLAND	0.11	1	0.56	1.66	1	0.80	1.96	1	1.46	1.30	1	0.70
FRINGE	8.34	1	8.72	1.89	1	1.59	2.00	1	1.47	1.52	1	0.92
FOREST	5.08	1	2.34	4.75	1	2.29	5.85	1	2.41	6.11	1	2.45
SHIELD	18.75	1	0.00	15.03	1	0.00	14.21	1	0.00	22.00	1	0.00
TOTAL	4.99	1	2.56	4.09	1	2.16	4.97	1	2.19	4.36	1	1.83
PERCENT	59%	12%	29%	56%	14%	30%	61%	12%	27%	61%	14%	25%
PERCENT (FOREST ONLY)	60%	12%	28%	59%	13%	28%	63%	11%	26%	64%	10%	26%

*Includes both regular bull-calf and special either-sex seasons but not guided moose licences or free big game permits to trappers.

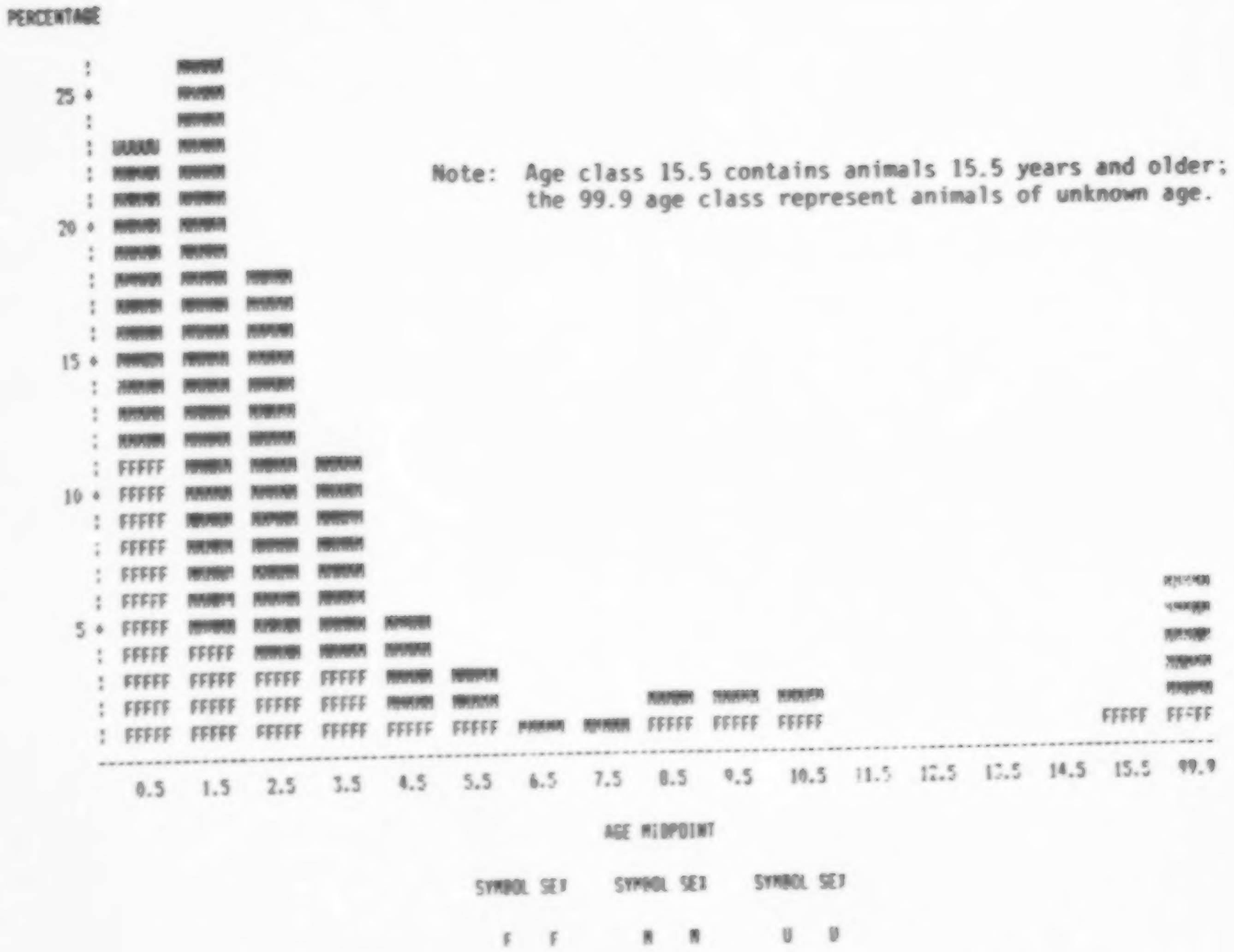
(b) Biological Collection Program

- The Department check stations at Carrot River and Usherville were eliminated in 1987, but collection points were set up at these locations (local gas stations) in an attempt to provide information. With other collection points spread throughout the northern forest areas of the province, 1,084 sex-age samples were obtained for moose compared to 1,096 samples in 1986. It appears that the collections point program, in which operators are paid $5 /sample, is capable of producing adequate sample sizes on an annual basis. Samples were collected during both the special either-sex and regular bull-calf seasons and tabulated according to animal sex and age class (Table 32, Figure 6).
- The overall harvest structure of 61% bulls, 16% cows and 23% calves was similar to the 61% bulls, 14% cows and 25% calves reported in the hunter questionnaire survey data for 1987. The differences were not statistically significant and can be attributed to sample size variability in the questionnaire survey.
- Analysis by age class indicated that the harvest consisted of 23.4% calves, 4.3% yearling females, 23.0% yearling males, 11.0% adult cows and 37.7% adult males (Table 33, Figure 7). In 1987, more calves and yearling animals were harvested than 1985 or 1986. Fewer adult animals, particularly mature bulls, were taken by sport hunters.
- The mean age of moose taken in the sport harvest (all age classes) has progressively declined from 1984 to 1986. In 1987, the mean age of cows increased slightly to 3.0 years and the mean age of bulls at 2.7 years remained the same as 1986 (Table 33). The mean age for adult moose 2.5 years and older illustrated similar trends as all age classes combined. Mean ages for adult moose in 1987 were 6.1 years for cows and 4.2 years for bulls compared to 5.7 and 4.1 years for cows and bulls in 1986, respectively.
- Increased either-sex quotas resulting in a higher adult cow harvest than previous years may be partially responsible since hunters, given the opportunity, usually select for bigger and potentially older animals. It is possible that the age structure of the adult cow population may be changing but the high percentage of calves and yearlings in the 1987 harvest suggests that there are more young

Table 32. Sex and age composition of the 1987 moose harvest based on tooth samples.

SEX	AGE Frequency Percent Row Pct Col Pct	0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	99.9	Total
FEMALE	Frequency	125	44	30	28	9	8	2	2	9	7	6	4	4	1	2	6	7	294
	Percent	11.44	4.03	2.74	2.56	0.82	0.73	0.18	0.18	0.82	0.64	0.55	0.37	0.37	0.09	0.18	0.55	0.64	26.90
	Row Pct	42.52	14.97	10.20	9.52	3.06	2.72	0.68	0.68	3.06	2.38	2.04	1.36	1.36	0.34	0.68	2.04	2.38	
	Col Pct	50.20	15.77	15.15	24.56	16.07	27.59	11.11	20.00	47.37	46.67	42.86	50.00	44.44	33.33	100.00	100.00	10.94	
MALE	Frequency	115	235	168	86	47	21	16	8	10	8	8	4	5	2	0	0	57	799
	Percent	10.52	21.50	15.37	7.87	4.30	1.92	1.46	0.73	0.91	0.73	0.73	0.37	0.46	0.18	0.00	0.00	5.22	72.28
	Row Pct	14.56	29.75	21.27	10.89	5.95	2.66	2.03	1.01	1.27	1.01	1.01	0.51	0.63	0.25	0.00	0.00	7.22	
	Col Pct	46.18	84.23	84.85	75.44	83.93	72.41	88.89	80.00	52.63	53.33	57.14	50.00	55.56	66.67	0.00	0.00	89.06	
UNKNOWN	Frequency	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
	Percent	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82
	Row Pct	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Col Pct	3.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total		249	279	198	114	56	29	18	10	19	15	14	8	9	3	2	6	64	1093
		22.78	25.53	18.12	10.43	5.12	2.65	1.65	0.91	1.74	1.37	1.28	0.73	0.82	0.27	0.18	0.55	5.86	100.00

Note: Age class 15.5 contains animals 15.5 years older; the 99.9 age class represents animals of unknown age.



Note: Age class 15.5 contains animals 15.5 years and older; the 99.9 age class represent animals of unknown age.

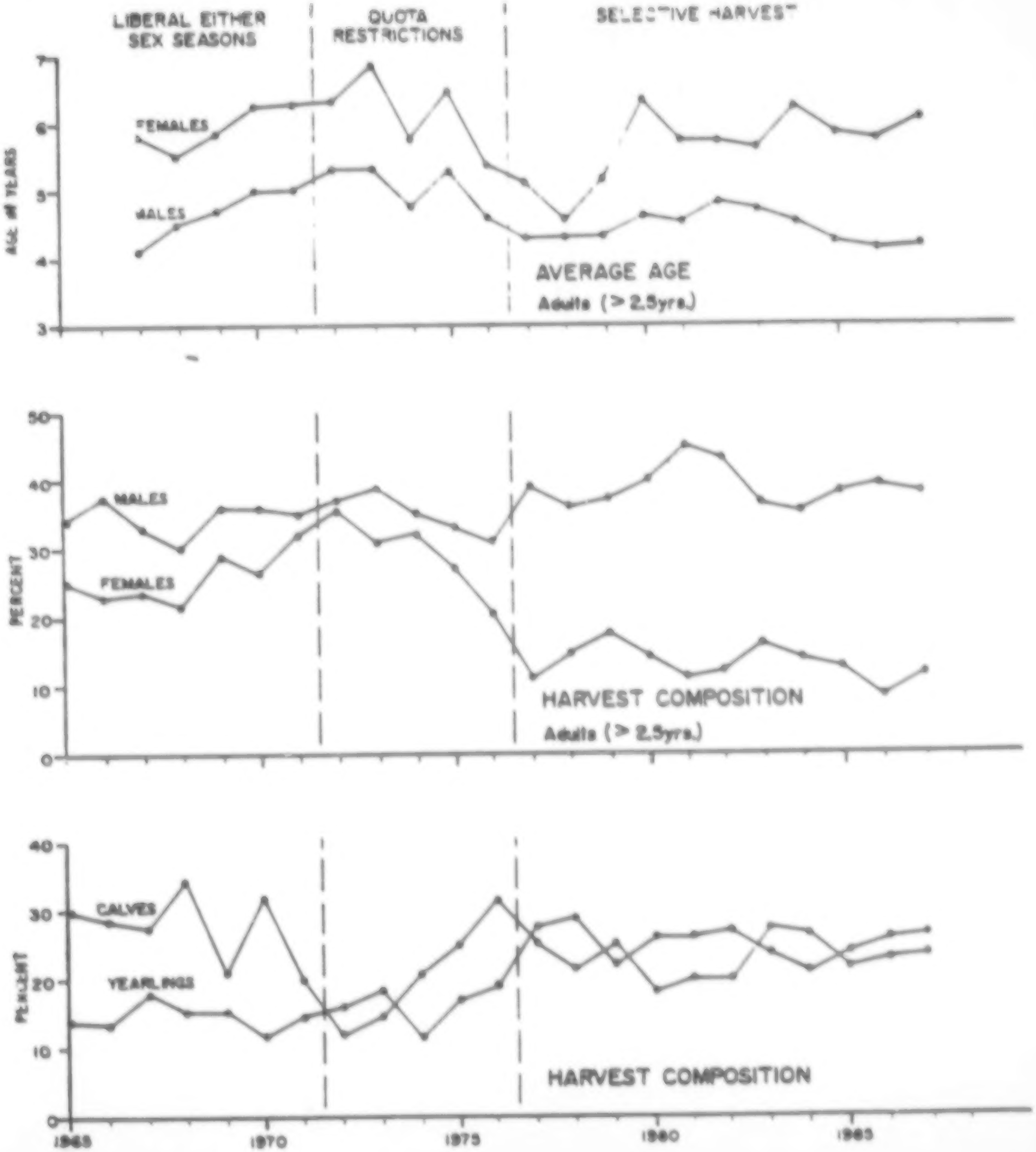
Figure 6. Sex and age composition of the 1987 moose harvest based on tooth samples.

Table 33. Sex and age class composition of the northern moose harvest based on tooth samples, 1984-1987

Age Class	1984 Female n = 339	1984 Male n = 713	1984 Total %	1985 Female n = 258	1985 Male n = 698	1985 Total %	1986 Female n = 261	1986 Male n = 835	1986 Total %	1987 Female n = 287	1987 Male n = 734	1987 Total %
0.5	12.2	11.5	= 23.7	8.8	12.2	= 21.0	9.5	12.4	= 21.9	12.2	11.2	= 23.4
1.5	4.7	15.6	= 20.3	4.9	17.2	= 22.1	5.1	20.0	= 25.1	4.3	23.0	= 27.3
2.5	1.8	11.1		3.4	14.4		1.9	16.4		2.9	16.5	
3.5	1.8	8.1		2.1	9.2		1.4	8.9		2.7	8.4	
4.5	1.7	4.6		1.2	4.3		0.7	5.8		0.9	4.6	
5.5	1.4	3.3		0.4	2.3		0.6	2.3		0.8	2.1	
6.5	2.0	2.5	= 48.9	1.6	1.8	= 50.3	0.6	1.0	= 47.0	0.2	1.6	= 48.7
7.5	1.4	1.9		0.7	1.5		0.5	1.2		0.2	0.8	
8.5	1.2	1.6		0.7	1.8		0.8	0.9		0.9	1.0	
9.5	0.9	0.8		0.6	1.3		0.3	0.9		0.7	0.8	
10.5+	1.6	1.2		1.6	1.4		1.2	1.6		1.7	1.9	
Unknown Age*	1.3	5.1		1.1	5.8		1.4	4.7		*unk. not included in %		
Mean Age (All Age Classes)	3.5	3.0		3.1	2.9		2.6	2.7		3.0	2.7	
Mean Age (Adult Age Classes 2.5 yrs +)	6.2	4.5		5.8	4.2		5.7	4.1		6.1	4.2	

*Unknown age animals not included in the calculations.

Figure 7. Sex and age composition of the provincial moose harvest based on check station samples, 1965-1987



animals in the northern moose herd than in the recent past, a situation characteristic of an expanding popultion.

B. POPULATION STATUS

1. Density: Transect Surveys

- Provincial trend survey estimates have declined slightly, from 0.59 moose/km^2 in 1986-87 (excluding Greenwater Park) to 0.40 moose/km^2 in 1987-88, with population densities higher in only 5 of the 10 transect survey units flown last winter (Table 34).
- Northwest Forest zones have moderate, relatively stable populations except for a small decline in the population trend for the Bronson Forest (WMZ 68), that may be associated with moose mortality because of recent winter tick infestations. However, all zones, with the exception of the Divide Forest (WMZ 67), remain below the 1978-87 long-term average with densities ranging from 0.19 to 0.41 moose/km^2.
- Central Forest zones remain low and stable, but with the exception of the Torch River survey (WMZ 62) are below the long-term average with densities ranging from 0.04 to 0.22 moose/km^2.
- Northeastern Forest zone population trends are higher than other parts of the province, but declined in 1988, particularly in the Porcupine Forest (WMZ 56 and 57) and Pine Bluff (WMZ 61) area. However, the Hudson Bay zones are slightly above the long-term average with 0.46 to 0.61 moose/km^2. The Cumberland Delta zones are still below the long-term average but show positive signs of recovery (0.46 to 0.50 moose/km^2) as a result of quota restrictions and bear control efforts.
- The relatively quick and low cost transect surveys provide rough estimates of moose densities throughout the Forest zones and can be used only to plot long-term trends in the moose population and compare various geographic regions, such as the northwest, central and northeast Forest zones. If population declines are indicated, by the transect data, a more extensive random stratified quadrat aerial survey design, which provides estimates with confidence limits of ±20%, is used to determine the status of the moose population. The quadrat surveys are expensive to fly and are usually flown only when a density problem is identified or data are required for a new zone or local population.

Table 38. Moose population estimates based on transect aerial surveys, 1978-1988

Area	Zone	Sq. km	Moose/km^2 1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1978-87 Average	Change From Last Survey (%)	Change From Average (%)
Porcupine East	57	284.9	0.22	0.38	0.48	0.47	0.36	0.58	0.28	0.44	0.45	0.59	0.46	0.43	-22	+7
Porcupine West	56	201.0	0.42	0.94	0.59	0.47	0.54	0.68	0.39	0.42	0.67	0.94	0.61	0.61	-35	+0
Leaf Lake	58	323.7	0.53	0.44	0.29	0.29	0.50	0.36	0.40	0.36	0.41	----	0.61	0.42	+49	+45
Greenwater	56	42.7	0.14	0.28	0.28	0.21	0.19	0.89	0.37	0.52	1.26*	0.96	----	0.51	----	----
Cumberland South	60	375.5	0.50	0.59	0.52	0.49	----	0.49	0.43	0.35	0.46	----	0.50	0.48	+9	+4
Cumberland Central	60	106.2	0.47	0.50	0.39	0.71	0.41	0.37	0.32	0.44	0.56	0.47	0.48	0.47	+0	+0
Pine Bluff	61	119.1	1.21	1.17	0.77	0.91	0.94	0.81	0.81	0.64	0.39	0.74	0.46	0.84	-38	-45
Connell Creek***	59	116.5***	----	----	1.20	1.18	0.71	0.68	0.65	0.82	0.74	1.12		0.89		
Candle Lake East	63	251.2	0.15	0.17	0.08	0.15	----	0.12	0.06	0.11	0.10	----	0.004	0.06	-60	-67
Torch River	62	196.8	0.36	0.26	0.21	0.21	0.18	0.25	0.10	0.17	0.12	0.22	----	0.21	----	----
Dore South	66	626.8	0.11	0.12	0.27	0.19	0.17	0.13	0.07	----	0.09	----	0.11	0.16	+22	-31
Waterhen-Keeley**	69	151.5**	0.24	0.28	0.31	0.21	----	----	0.27	0.18	0.11	0.27	----	0.24	----	----
Cold Lake	69	748.6	0.36	0.16	0.30	0.29	----	0.20	0.13	0.15	0.19	----	----	0.21	----	----
Divide	67	422.7	0.28	0.51	0.46	0.39	0.27	0.19	0.30	0.44	0.26	0.33	0.41	0.35	+24	+17
Bronson	68	392.1	0.67	0.51	0.56	0.47	----	0.26	0.49	0.31	0.36	----	0.32	0.42	-6	-24

* based on comparable survey blocks ** revised survey in 1980 *** revised survey in 1981
Overall Density = 0.40 (10 blocks)

2. Density: Quadrat Surveys
   - The 1987-88 aerial survey effort was restricted to the Fort a la Corne Wildlife Management Unit (WMZ 50), carried out in conjunction with a quadrat elk survey.
   - However, based on the 1986-87 survey work, the Porcupine Forest (WMZ 56 and 57), Bronson Forest (WMZ 68) and Cumberland South (WMZ 60) at 3276 ± 17%, 1457 ± 20% and 1724 ± 20% moose, respectively, have stable populations with no significant change from previous survey efforts in 1983 and 1984 (Table 35). Although the data suggest minor increases in all three survey areas, confidence intervals overlap between survey years.
   - The moose restoration areas were not flown in 1987-88, however, the Thunder Hills and Cub Hills moose restoration areas had population estimates in 1986-87 of 125 ± 20% and 278 ± 20%, respectively (Table 35). The data suggest that the Thunder Hills densities have increased from 0.28 to 0.37 moose/km^2 and Cub Hills from 0.19 to 0.34 moose/km^2 but confidence intervals are too wide and population estimates too low to detect major population changes. Subjective assessments by field staff indicate that small increases have occurred in the moose population for both areas since 1983 when road closures, game preserves and corridor game preserves were implemented.

3. Population Structure:
   - In the Cumberland Delta (WMZ 60 and 61), 413 moose were classified as to sex and age in December 1987, using a helicopter (Table 36). The estimated sex and age composition determined from these surveys indicate a healthy population structure in both management zones, including the Lobstick Lake (WMZ 60a) and Bearhead Marsh (WMZ 61a) bear removal project areas. A small reduction in the calf/cow ratio was apparent in WMZ 60 (excluding the Lobstick Lake area), but the ratio remained high in the Lobstick Lake area. Because the Lobstick Lake bear removal project area comprises a large portion of WMZ 60, overall calf production in WMZ 60 is considered to be normal. Bull/cow ratios are considered normal, with a high proportion of yearling males, as a result of high calf survival in 1986-87.

Table 35. Moose population estimates* based on stratified random quadrat aerial survey sampling, 1982-1988

Survey Block	WMZ	Survey Area km^2	1982-83 Estimate (moose/km^2)	1983-84 Estimate (moose/km^2)	1984-85 Estimate (moose/km^2)	1985-86 Estimate (moose/km^2)	1986-87 Estimate (moose/km^2)	1987-88 Estimate (moose/km^2)
Bronson	68	3186	1376 ± 22% (0.43/km^2)	---	---	---	1457 ± 20% (0.46/km^2)	---
Cub Hills**	63	822	160 ± 32% (0.19/km^2)	194 ± 29% (0.23/km^2)	282 ± 24% (0.35/km^2)	---	276 ± 20% (0.34/km^2)	---
Cumberland South	60	2279	---	1667 ± 20% (0.73/km^2)	---	---	1724 ± 20% (0.76/km^2)	---
Duck Mt. Park	37	469	228 ± 18% (0.49/km^2)	---	---	---	372 ± 22% (0.79/km^2)	---
Fort a la Corne	50	1401	---	---	---	---	---	427 ± 20%
Moose Mt. Park	33	684	426 ± 20% (0.62/km^2)	370 ± 19% (0.54/km^2)	356 ± 23% (0.52/km^2)	302 ± 20% (0.44/km^2)	418 ± 18% (0.61/km^2)	---
Porcupine	56 & 57	3553	---	3092 ± 15% (0.87/km^2)	---	---	3346 ± 17% (0.94/km^2)	---
Thunder Hills**	66	340	97 ± 22% (0.28/km^2)	106 ± 26% (0.31/km^2)	158 ± 17% (0.46/km^2)	---	120 ± 33% (0.35/km^2)	---
Candle Lake**	64	1599	---	---	---	236 ± 23%	---	---
Woody Burn	57	1134	---	686 ± 20%	---	765 ± 18%	---	---

* Moose population estimate ± 95% C.I.

**Represent moose restoration project areas; survey design differs slightly from other survey blocks.

Table 36. **Sex and age composition of the northern moose population based on post-season helicopter observations, 1984-1988**

WMZ	Bull/Cow/Calf Ratio (sample size) 1984-85	1985-86	1986-87	1987-88
54	---	---	26/100/69 (76)	---
56	42/100/58 (148)	69/100/69 (162)	---	---
57	31/100/41 (146)	30/100/55 (155)	---	---
58	34/100/40 (134)	32/100/59 (211)	---	---
59	52/100/54 (126)	45/100/35 (469)	56/100/52 (200)	---
60	27/100/33 (152)	58/100/54 (146)	60/100/60 (110)	90/100/43 (119)
60a*	48/100/48 (253)	94/100/45 (79)	85/100/65 (161)	100/100/81 (90)
61	40/100/51 (254)	64/100/44 (202)	51/100/47 (144)	72/100/50 (160)
61a**	54/100/33 (152)	56/100/42 (71)	41/100/52 (174)	118/100/68 (44)
63	---	61/100/43 (90)	82/100/47 (112)	---
64	20/100/46 (108)	124/100/39 (87)	---	---
66	48/100/50 (102)	50/100/41 (88)	90/100/42 (72)	---
67	39/100/45 (159)	39/100/55 (170)	---	---
68	42/100/65 (163)	31/100/61 (160)	---	---
69	43/100/51 (164)	47/100/30 (143)	---	---
Commercial Forest	41/100/49 (1963)	50/100/47 (2233)	58/100/54 (1049)	86/100/56 (413)

*60(a) - Lobstick Lake - Bear removal study area

**61(a) - Bearhead Marsh - Bear removal study area

- A total of 631 moose was classified through the Cooperative Wildlife Management Study between September and November 1987 compared to 1,262 moose in 1986. Observers reported 101 bulls/100 cows/71 calves (18% twinning rate) compared to 79 bulls/100 cows/59 calves (21% twinning rate) in 1986 and 84 bulls/100 cows/58 calves (21% twinning rate) in 1985.

4. Southern WMZ: Population Status

(a) Cypress Hills Park (WMZ 6 and 7):

- The population in WMZ 7 remains in a depressed state due to poor browse conditions and unregulated harvest in the West Block. During the West Block elk survey in December 1987, 22 moose were observed compared to 18 moose observed on a similar survey in 1986. A helicopter transect survey in the East Block (WMZ 6) in February 1987, counted 96 moose (84 adults and 12 calves), located primarily on private land, but no surveys were carried out in 1987-88.

(b) Fort a la Corne WMU (WMZ 50):

- The moose population in the Fort a la Corne WMU has improved significantly, from 234 ± 24% in 1982-83 to 427 ± 20% in 1987-88 (Table 35). The population appears to be responding to favorable habitat changes as a result of forest harvest strategies to remove jackpine stands and restrictive sport hunting licence quotas to limit the moose kill. Road closures implemented by the Department in the fall of 1987 will provide long-term protection for moose populations and more liberal licence quotas have been implemented for the 1988 hunting season.

(c) Duck Mountain Park (WMZ 37):

- A quadrat survey in January 1987 indicated a population of 372 ± 15% moose compared to 228 ± 18% in 1983 (Table 35).

(d) Greenwater Park (WMZ 56):

- No reliable population estimates exist for Greenwater Park, but field staff indicate that moose populations are stable and can continue to support a limited quota harvest.

(e) Moose Mountain Park (WMZ 33):

- Past quadrat surveys indicate a fluctuating population from 463 ± 20% moose in 1983, 302 ± 20% moose in 1986, to 418 ± 18% in 1987 (Table 35). The 1987 estimate suggests that the population may be recovering, although confidence intervals overlap from year to year. Unregulated harvest is high and may be limiting population growth.

(f) Thickwood Hills (WMZ 54):

- The results of a transect survey in January 1987 (48 observed moose) were used to project a WMZ 54 population estimate of 0.33 moose/km^2 or 420 animals south of Highway No. 3. A low sport harvest in 1987 and relatively mild winter in this area suggests that populations have not changed significantly.

D. 1988 MANAGEMENT OBJECTIVES

Moose populations remain relatively stable in the northwest and northeast Forest zones in 1987-88. Low populations in the central areas still require special management action, but the road closure, road corridor game preserve and area game preserve programs are having a positive impact in allowing populations to recover to their historical levels.

The long-term management objective for moose is to meet user demand by increasing the Saskatchewan moose population, harvest and recreation to levels higher than currently exist. The biological objectives of the selective harvest moose management program, introduced in 1977, remain the same today.

Field reports suggest that northern moose populations may be experiencing problems with the moose tick parasite. The last outbreak occurred in northwestern Saskatchewan following the 1981-82 winter and resulted in high mortality on young age class animals. Approximately 30+ moose with heavy tick loads were found dead in spring 1988 in the Hudson Bay, Greenwater Park, Candle Lake and Loon Lake/Pierceland areas. Aerial surveys conducted in WMZ 67 and 68 in March 1988 indicated light to moderate hair loss on a sample of 43 moose. Alberta and Manitoba have also reported heavy tick infestations on their moose populations suggesting that all 3 provinces are experiencing a severe outbreak that may indirectly result in higher moose mortality. The situation will be closely monitored throughout 1988-89 from sport harvest, biological and aerial survey information.

1. For 1988, special quotas will be maintained except for a reduction of 75 licences in WMZ 55 and 68 combined and an increase of 100 licences in WMZ 50. High moose mortality, caused by a recent outbreak in winter tick infestation is suspected in WMZ 68 and is the reason for a reduction in licences for 1988. Maintaining existing quotas in other zones will ensure a high level of protection for breeding females, a strategy that is necessary to meet long-term sport hunting demand. A new boundary change in WMZ 68 will mean that a portion of WMZ 47 will be included with WMZ 68 for moose hunting.

2. The early and late regular season structure for Saskatchewan residents will be maintained for most WMZs. WMZ 74, 75 and 76 will continue to have an early season that is extended through the rut because the harvest is relatively low and water access problems make a late season unrealistic. The strategy to protect moose in the peak rut will be maintained for rifle seasons in all other WMZ where harvest rates are much higher and access is easier for the sport hunter. To provide more recreation opportunity, white-tailed deer and moose season dates will overlap for most Forest zones enabling hunters to hunt both species at the same time.

3. The game preserve and road closure initiatives rather than season closures will still be used as principal management tools to increase populations in the central Forest zones. The impact of the Moose Restoration Program on moose populations will continue to be monitored closely. For 1988, road corridor game preserves will be implemented along the newly constructed Bittern and Cowan Lake roads and a number of unused forest access roads will be closed in the Forest zones.

4. Guided moose season dates have been changed for 1988, to better coincide with the resident season dates and resolve some outstanding access and season structure problems for northern outfitters. These changes were ratified by the Saskatchewan Outfitters Association at their annual meeting in October, 1987. The major changes include later November seasons in WMZ 60, 61, 62 and 70 to 73, a shorter October season in WMZ 70 to 73 and a shorter November season in WMZ 69, a longer early (August opening date) season for WMZ 70 to 73, and elimination of the late November season, with extended early season dates, in WMZ 74 to 76 to coincide with the season structure for resident hunters. Licence quotas (400) will remain the same for 1988, with some minor changes on an individual zone basis, to accommodate Outfitter requests for licences.

5. Archery moose season dates have been changed so that the dates extend through the peak of the rut. Extremely low hunter participation and harvest success, however, is unlikely to interfere with the rut and the few hunters that do take advantage of the season should experience a more successful hunt. WMZ 37 (including Duck Mountain Park) and 55 and 68 combined will be opened to archery moose hunters in 1988. However, licence quotas (50) will be established only for WMZ 37 and allocated through the big game draw system. WMZ 55 and 68 will be open to all resident licence holders for an either-sex moose hunt, provided they hunt with a bow during the specified archery season dates. Archers' unfilled regular licences from WMZ 55 and 68 combined will be valid during the regular rifle moose seasons but only a bull or calf moose may be taken.

6. Southern Areas:

   (a) Moose Mountain Park (WMZ 33):

   The season will remain closed to sport hunters in 1988, although depending on the population status, consideration is being given to a limited quota in 1989.

(b) Cypress Hills Park (WMZ 6 & 7):

In view of the stable moose population in WMZ 6, a small 25 licence quota will be maintained in 1988. WMZ 7 will remain closed due to low populations and existing unregulated harvest.

(c) Thickwood Hills (WMZ 54):

The 100 licence quota season will continue in 1988 in view of the relatively stable moose population.

(d) Fort a la Corne WMU (WMZ 50):

The 1988 quota will be increased to 200 licences in view of the significant increase in moose populations since 1982-83.

(e) Duck Mountain Park (WMZ 37):

The present 100 licence quota will be retained as the existing hunting regime appears to be maintaining stable populations.

(f) Greenwater Park (in WMZ 56):

A quota of 50 licences will be maintained in 1988.

E. 1988 MOOSE SEASON

Special Moose	Zone 5	Oct. 24 - Oct. 29	one moose, either sex	- Licence quotas (in brackets) for each zone: 5(25), 37(100), 50(100), 54(100), 48, 49 and 56 combined (200), 57(200), 58(200), 59(400), 60(200), 61(100), 62(50), 67(150), 47, 55 and 68 combined (75), Greenwater Lake Provincial Park (50). **Note: Some portions of the Nesting and Royal Lake PFRA Pastures in Zone 54 will be closed to moose hunting. Watch for "No Hunting" signs.**
	Zones 48, 49 and 56 combined; and Zones 57 to 62 and 67, including Leaf Lake Wildlife Management Unit	Sept. 12 - Sept. 17 & Nov. 7 - Nov. 19	one moose, either sex	
	Zone 37, including Duck Mountain Provincial Park; and that portion of Zone 47 north of Highway No. 3 and west of Highway No. 26 and Zones 55 and 68 combined, including Bronson Forest Recreation Site	Nov. 7 - Nov. 19	one moose, either sex	
	Greenwater Lake Provincial Park Only	Nov. 7 - Nov. 19	one moose, either sex	
	Zone 50, including Fort a la Corne Wildlife Management Unit	Sept. 12 - Sept. 24 & Nov. 7 - Nov. 19	one moose, either sex	
	Zone 54	Nov. 7 - Nov. 12	one moose, either sex	
Special Moose (Archery)	Zones 37, including Duck Mountain Provincial Park	Sept. 19 - Oct. 1	one moose, either sex	- The archery moose licence in Zone 37 is valid only during the archery season; licence quota (50).
Archery Moose (Sask. Residents Only)	Zones 55 and 68 combined, including Bronson Forest Recreation Site	Sept. 19 - Oct. 1	one moose, either sex	**- A regular bull-calf moose licence can be used to harvest any moose with a bow during the archery season dates. Unfilled licences can also be used during the regular moose season but only to harvest a bull or 1988 calf moose.**
Regular Moose (Sask. Residents Only)	Zones 43, 48, 49, 53, 56 to 57 and 59, including Cookson and Leaf Lake Wildlife Management Units; and Nipawin Provincial Park	Oct. 3 - Oct. 8	one bull or one 1988 calf moose	**- "Bull Moose" means a male moose one or more years old. "Calf Moose" means any moose born in 1988. "Cow Moose" means a female moose one or more years old.** - Successful applicants for a special moose licence are not eligible to purchase a regular moose licence. - The antlers of bull moose and the lower jaw of calf moose must accompany the carcass.
Early Season	Zones 70 to 73, including Clearwater River and Lac La Ronge Provincial Parks	Aug. 29 - Sept. 17	one bull or one 1988 calf moose	
	Zones 74, 75 and 76	Aug. 29 - Oct. 8	one bull or one 1988 calf moose	
Late Season	Zones 43, 48, 49 and 56 to 59, including Leaf Lake Wildlife Management Unit	Nov. 21 - Dec. 3	one bull or one 1988 calf moose	
	That portion of Zone 47 north of Highway No. 3 and west of Highway No. 26, and Zones 37, 55 and 60 to 69, including Cookson Wildlife Management Unit; Nipawin Provincial Park; and Bronson Forest Recreation Site	Nov. 21 - Nov. 26	**one bull or one 1988 calf moose**	
	Zones 70 to 73, including Clearwater River and Lac La Ronge Provincial Parks	Nov. 7 - Nov. 26	**one bull or one 1988 calf moose**	
Guided Moose & White-tailed Deer (Canadian Residents and Non-residents)	**Zones 60, 61 and 62**	**Oct. 3 - Oct. 22 & Nov. 7 - Nov. 26**	**one bull or one 1988 calf moose**	**- Persons possessing a guided moose licence may also purchase a white-tailed deer licence and hunt during the same season dates.** **- Services of a registered guide must be used for both species.** **- The antlers of bull moose and the lower jaw of calf moose must accompany the carcass.** **- 400 Guided Moose Licences are available directly from outfitters. Quotas (in brackets) for each zone: 60(60), 61(115), 62(15), 69(15), 70(10), 71(45), 72(45), 73(10), 74(45), 75(10), 76(30).**
	Zone 69	**Sept. 5 - Sept. 17, Oct. 3 - Oct. 8 & Nov. 14 - Nov. 19**	**one bull or one 1988 calf moose**	
	Zones 70 to 73, including Clearwater River and Lac La Ronge Provincial Parks	**Aug. 29 - Sept. 17, Oct. 3 - Oct. 8 & Nov. 7 - Nov. 26**	**one bull or one 1988 calf moose**	
	Zones 74 to 76	**Aug. 29 - Oct. 8**	**one bull or one 1988 calf moose**	

MULE DEER

A. REVIEW OF 1987 HUNTING SEASON

1. Licence Sales*

	1980	1981	1982	1983	1984	1985	1986	1987
Rifle (Regular)								
Either Sex	4,100	4,329	5,471	5,754	5,754	6,453	6,836	6,857
Antlerless	--	--	1,913	1,455	6,331	9,196**	4,042	2,032
Archery								
Either Sex	245	351	600	775	804	804	946	841
Antlerless	--	--	--	--	--	172	72	52
Muzzleloader								
Either Sex	--	--	--	--	--	--	152	146
Antlerless	--	--	--	--	--	--	123	135
TOTAL SALES	4,345	4,679	7,984	7,984	12,889	16,625	12,171	10,063

* Final (June 1) sales figures, however, all data analysis based on figures available in February.

**9,196 - 2 deer for each antlerless licence.

- The either-sex rifle licence sales were similar 1986. Antlerless licence sales declined by 49% due to an overall reduction of available licences and less interest expressed by hunters in pursuing antlerless animals.

2. Harvest

- The overall mule deer harvest decreased by 17% from 9,691 in 1986 to 8,058 in 1987 as a result of a significant reduction in antlerless licence quotas (Table 37).
- Regular either-sex rifle hunter success was 83% for all zones combined, a small decline of 1.4% from 1986 (Table 38).

Table 37. Provincial Mule Deer Harvest, 1987

Ecozone	#Actual Hunters	#Zone Hunters	#Successful Hunters	%Hunter Success	Harvest	Harvest Structure Males	Females	Young	Hunter Days	Hunter Days/ Animal
Grassland	7,599	7,599	6,431	84.6	6,431	1.84	1	0.34	16,686	2.6
Farmland	1,693	1,693	1,392	82.2	1,392	1.69	1	0.34	3,811	3.7
Parkland	296	296	235	79.4	235	2.48	1	0.42	921	3.9
Total	9,588	9,588	8,058	84.0	8,058	1.81	1	0.34	21,418	2.7

Table 38. Estimated hunter success and harvest pressure during the either-sex mule deer rifle season, 1987.

Species = 2D1 Mule Deer, Rifle (Either Sex) Ecological Division = 1 Grassland

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >---			Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
						Males	Females	Young			
01	246	246	230	93.50	230	3.35	1	0.12	477	2.07	0.0573
02	858	858	773	90.09	773	5.01	1	0.33	1,682	2.18	0.1580
03	147	147	137	93.20	137	3.65	1	0.20	315	2.30	0.0733
04	149	149	134	89.93	134	3.17	1	0.09	255	1.90	0.0314
05	200	200	185	92.50	185	5.67	1	0.22	336	1.82	0.0563
06	287	287	262	91.29	262	5.53	1	0.13	657	2.51	0.1566
07	145	145	133	91.72	133	2.68	1	0.27	265	1.99	0.1398
08	51	51	50	98.04	50	5.75	1	0.75	101	2.02	0.0297
09	489	489	461	94.27	461	4.69	1	0.25	912	1.98	0.2655
10	779	780	748	96.02	748	6.89	1	0.48	1,382	1.85	0.3897
11	49	49	48	97.96	48	39.00	1	1.00	92	1.92	0.0934
12	94	94	82	87.23	82	7.00	1	0.88	187	2.28	0.5436
13	580	580	530	91.38	530	5.00	1	0.27	1,088	2.05	0.2664
14	786	786	676	86.01	676	2.92	1	0.29	1,571	2.32	0.2815
Total	4,860	4,861	4,449	91.54	4,449	4.55	1	0.29	9,319	2.09	0.1438

Species = 2D1 Mule Deer, Rifle (Either Sex) Ecological Division = 2 Farmland

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >---			Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
						Males	Females	Young			
19	238	239	210	88.24	210	1.78	1	0.18	478	2.28	0.0518
23	244	244	183	75.00	183	2.40	1	0.29	666	3.64	0.1160
24	249	250	217	87.15	217	2.92	1	0.36	541	2.49	0.1120
25	149	149	136	91.28	136	2.56	1	0.26	246	1.81	0.0422
26	198	199	185	93.43	185	2.90	1	0.19	405	2.19	0.0917
27	144	144	128	88.89	128	2.10	1	0.28	328	2.56	0.0667
29	150	150	113	75.33	113	1.50	1	0.21	400	3.54	0.0750
30	100	100	71	71.00	71	2.00	1	0.56	298	4.20	0.0410
Total	1,473	1,474	1,245	84.52	1,245	2.27	1	0.27	3,362	2.70	0.0370

Species = 2D1 Mule Deer, Rifle (Either Sex) Ecological Division = 3 Parkland

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >---			Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
						Males	Females	Young			
45	101	101	69	68.32	69	4.57	1	0.71	312	4.52	0.0407
46	194	194	167	86.08	167	2.52	1	0.37	608	3.64	0.1020
Total	295	295	236	80.00	236	2.93	1	0.44	921	3.90	0.0093

- Antlerless hunter success was 86% for all zones combined, only a slight change from 85% in 1986, despite the lengthening of the rifle season from 3 days to 4 days (Table 39).

3. Hunter Recreation

- Recreation days totalled 21,418, an 8% decline from 23,392 days in 1986 (Table 37).
- Hunter-days/animal actually increased from 1.7 in 1986 to 2.1 in 1987 for the antlerless rifle seasons but remained constant at 2.8 days for either-sex rifle seasons in both 1986 and 1987.
- The number of days required to harvest an antlerless deer in 1987, as measured by hunter-days/animal, has increased from the 1983-85 levels, so that only 0.7 hunter days/animal separates either-sex from antlerless rifle season hunters. During the antlerless seasons in the mid-1980's it took less time to shoot an antlerless animal but it appears that all hunters, regardless of licence type, are now spending almost the same amount of time in the field.

4. Harvest Structure

- The either-sex rifle season buck/doe ratio in the prime mule deer Grassland zones was 4.55 males/female, considerably higher than 2.27 and 2.93 males/female in the Farmland and Parkland harvests (Table 38). In zones with relatively high mule deer densities, hunters tend to select for bucks provided they observe a lot of deer during their hunt. For all seasons and zones combined the ratio of 1.81 bucks/doe is slightly higher than 1.26 bucks/doe in the 1986 harvest, possibly a reflection of more yearling age class animals in the population (Table 40). Fewer antlerless animals (0.29 fawns/doe) were taken in the 1987 either-sex harvest as a consequence of the higher buck kill.
- The antlerless season resulted in fewer fawns (0.39 fawns/doe) harvested than 1986 (0.49 fawns/doe) although success rates were similar for both years (Table 40). A similar trend was

Table 39. Estimated hunter success and harvest pressure during the antlerless mule deer rifle season, 1987.

Species = 2X1 Mule Deer, Rifle (Antlerless) Ecological Division = 1 Grassland

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
01	119	119	110	92.44	110	0.00	1	0.24	192	1.75	0.0230
02	185	185	140	75.68	140	0.01	1	0.31	321	2.29	0.0301
04	64	64	64	100.00	64	0.00	1	0.38	85	1.33	0.0104
06	188	188	169	89.89	169	0.00	1	0.38	410	2.43	0.0977
07	97	97	92	94.85	92	0.00	1	0.15	164	1.78	0.0865
08	76	76	72	94.74	72	0.00	1	0.17	104	1.44	0.0306
09	90	90	84	93.33	84	0.00	1	0.35	149	1.77	0.0433
10	553	553	513	92.77	513	0.00	1	0.45	848	1.65	0.2391
11	98	98	97	98.98	97	0.00	1	0.23	142	1.46	0.1441
12	180	180	163	90.56	163	0.00	1	0.50	322	1.98	0.9360
Total	1,651	1,651	1,504	91.10	1,504	0.00	1	0.35	2,738	1.82	0.0422

Species = 2X1 Mule Deer, Rifle (Antlerless) Ecological Division = 2 Farmland

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
19	94	94	73	77.66	73	0.00	1	0.72	161	2.21	0.0174
23	127	127	75	59.06	75	0.00	1	0.53	288	3.84	0.0501
Total	220	220	147	66.82	147	0.00	1	0.62	449	3.05	0.0049

Table 40. Provincial mule deer harvest structure and recreation days. 1986 and 1987

Season	1986				1987			
	Harvest	Harvest Structure M F Y	Hunter Days	Hunter Days/ Animal	Harvest	Harvest Structure M F Y	Hunter Days	Hunter Days/ Animal
Either-Sex								
Rifle	5,813	3.94:1:0.36	12,469	2.2	5,929	3.79:1:0.29	13,602	2.3
Archery	237	1.75:1:0.41	4,367	18.4	263	1.99:1:0.30	3,681	13.9
Muzzleloader	92	1.52:1:0.45	495	5.4	101	2.13:1:0.16	445	4.4
Totals	6,142	3.74:1:0.36	17,331	2.8	6,293	3.64:1:0.29	17,728	2.8
Antlerless								
Rifle	3,417	0:1:0.49	5,467	1.6	1,651	0:1:0.38	3,187	1.9
Archery	10	0:1:0.67	280	28.0	15	0:1:0.25	166	11.1
Muzzleloader	81	0:1:0.45	314	3.9	99	0:1:0.72	337	3.4
Totals	3,508	0:1:0.49	6,061	1.7	1,765	0:1:0.39	3,690	2.1
All Seasons Combined	9,650	1.26:1:0.45	23,392	2.4	8,058	1.81:1:0.34	21,418	2.7

observed for all seasons and zones combined. Significantly lower antlerless quotas for 1987 may have given hunters more opportunity to select for adult animals. Preseason fawn/doe ratios indicate relatively good fawn survival in 1987, suggesting that fawn production was not a factor contributing to lower fawn/doe ratios in the sport harvest.

5. Archery

- For all seasons a total of 823 active bowhunters harvested 278 mule deer on either-sex and antlerless licences in 1987 (Table 41). Good hunting conditions prevailed throughout the September hunting season and resulted in higher overall success rates and fewer days required to harvest an animal compared to 1986.
- Hunters in the either-sex combined WMZs (1 to 8, 13, 14, 18 to 27, 29, 30, 45 and 46) experienced a success rate of 32%, an increase from 22% in 1986, but hunter success in WMZ 9 & 10 declined from 53% to 41%. Fifty either-sex archery licences were available for WMZ 12 with a hunter success estimate of 27%.
- The antlerless combined WMZs (including WMZ 12) success rate increased from 11% in 1986 to 26% in 1987. The success rate in WMZ 9 and 10 also increased from 14% to 53%.
- The either-sex harvest structure was 1.98 bucks/doe/0.30 fawns compared to 1.74 bucks/doe/0.41 fawns in 1986. Fewer fawns (0.24 fawns/doe) were taken in the antlerless season. These trends are similar to that experienced in the 1987 rifle harvest.

6. Muzzleloader

- As in 1986, muzzleloader hunters had a very successful season with 265 hunters in the field harvesting 200 mule deer, a small increase from 1986 (Table 42).
- Hunter success was estimated to be 73% in the either-sex season and 78% in the antlerless season compared to 60% and 66%, respectively, in 1986. An average of 3 to 4 days were

Table 41. Estimated hunter success and harvest pressure during the mule deer archery season, 1987.

Species = 2A1 Mule Deer, Archery (Either Sex) Ecological Division = 1 Grassland

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
01	585	585	190	32.48	190	1.67	1	0.33	2,845	14.97	0.3419
09	143	143	59	41.26	59	2.90	1	0.20	600	10.17	0.1746
12	51	51	14	27.45	14	4.50	1	0.00	237	16.93	0.6889
Total	779	779	263	33.76	263	1.98	1	0.30	3,681	14.00	0.0568

Species = 2B1 Mule Deer, Archery (Antlerless) Ecological Division = 1 Grassland

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
01	31	31	8	25.81	8	0.00	1	0.00	120	15.00	0.0144
09	13	13	7	53.85	7	0.00	1	0.75	46	6.57	0.0133
Total	44	44	15	34.09	15	0.00	1	0.24	166	11.07	0.0025

Table 42. Estimated hunter success and harvest pressure during the mule deer muzzleloader season, 1987.

Species = 2M1 Mule Deer, Muzzleloading (Either Sex) Ecological Division = 1 Grassland

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
01	92	92	64	69.57	64	2.70	1	0.30	292	4.56	0.0350
09	46	46	38	82.61	38	1.60	1	0.00	153	4.03	0.0445
Total	138	138	101	73.19	101	2.18	1	0.16	445	4.41	0.0068

Species = 2N1 Mule Deer, Muzzleloading (Antlerless) Ecological Division = 1 Grassland

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
01	87	87	60	68.97	60	0.03	1	0.35	255	4.25	0.0306
09	40	40	38	95.00	38	0.00	1	1.88	83	2.18	0.0241
Total	127	127	99	77.95	99	0.02	1	0.71	337	3.40	0.0052

required for a muzzleloader hunter to harvest an animal. As in the archery and rifle seasons, muzzleloader hunters experienced good hunting conditions throughout the early October season.

- The either-sex harvest structure was 2.18 bucks/doe/0.16 fawns compared to 1.55 bucks/doe/0.46 fawns in 1986. More fawns (0.71 fawns/doe) were taken in the antlerless season than 1986 but since this harvest trend differs from the archery and rifle seasons, it may simply be a function of low quotas allocated to the muzzleloader weapon group.

B. POPULATION STATUS

1. Density Estimates and Population Structure

- Minimal snow cover during the 1987-88 winter prevented any attempts at obtaining density or population structure information on mule deer from aerial surveys. Modelling of population changes in WMZ 10, one of the high density zones for mule deer, from 1985-86 data, suggests populations are similar to levels that existed in the early 1980's. Preliminary calculations indicate a 1987-88 winter and 1988 preseason population in WMZ 10 of 7,275 and 9,592 deer, respectively. Estimates are unavailable for any other zones in 1987.

2. Population Structure: Co-operative Wildlife Management Study

- Total preseason observations in all ecozones declined dramatically from 1986 levels, despite a small rise in the number of co-operators participating in the program. Provincially, observations decreased by 36% from 10,106 in 1986, to 6,492 in 1987 with the greatest reduction in the Grasslands ecozone (Table 43). A declining population may have contributed to fewer observations.
- The provincial preseason buck/doe ratio increased from 38 bucks/100 does in 1986 to 42 bucks/100 does in 1987 (Table 43). The increase was most noticeable in the Grassland zones where ratios increased from 41 to 47 bucks/doe, one of the

Table 43. Provincial mule deer population structure based on pre-season field observations, Sept. - Nov. 1984 to 1987

Ecological Zone	Males* / 100 Females				Fawns / 100 Females				Sample Sizes (n)			
	1984	1985	1986	1987	1984	1985	1986	1987	1984	1985	1986	1987
GRASSLAND	44	40	41	47	80	82	79	90	3581	3753	6487	3839
FARMLAND	44	41	34	37	84	71	70	62	1365	1331	2807	2163
PARKLAND	33	33	36	31	59	54	76	71	91	176	585	373
FRINGE	70	43	37	17	30	129	58	56	20	19	37	31
FOREST	143	125	61	49	29	25	61	61	19	10	69	86
ALL ZONES	44	40	38	42	80	78	76	78	5076	5289	10033	6492

*Males/100 Females = Yearling Males + Mature Males + Unclassified Males/Total Females highest male/female ratios on record (Table 44). These ratio changes are partially due to higher antlerless quotas during the 1986 hunting season but the ratios suggest that there are reasonably good buck densities in the population from the perspective of meeting sport hunter demand. Yearling bucks comprised 36% of the preseason male population, slightly higher than 32% yearlings observed in 1986, suggesting good fawn survival during the mild 1987-88 winter (Table 45).

- Fawn production at 78 fawns/100 does for all ecozones combined, was slightly higher than 1986. The Grassland ratios increased from 79 fawns/100 does in 1986 to 90 fawns/100 does in 1987. The percentage of does with twins in the pre-hunt population increased in 1987 in response to higher fawn production (Table 46).
- Expansion of the mule deer resource outside the key management zones in the Grasslands ecosystem is occurring based on field reports and preseason observations. In 1983 only 15% of the preseason observations came from ecozones outside the Grassland zone and observations continue to increase from 29% in 1984, 30% in 1985, and 35% in 1986 to 41% in 1987.

C. 1988 MANAGEMENT OBJECTIVES

- Throughout the mid 1980's (1984 to 1986) the overall management strategy for mule deer, particularly in the high density zones in southwestern Saskatchewan, was to stabilize the population structure and reduce populations to levels that the habitat was capable of supporting and that were tolerable to landowners and the general public. This reduction was necessary to contend with a rapidly expanding mule deer population that, because of a series of mild winters and past harvest strategies directed primarily towards bucks, grew to an estimated 70,000 deer in 1985, in the Grassland and Farmland ecozones.

Table 44. Grassland mule deer population structure based on pre-season field observations, Sept. - Nov. 1987

WMZ	Number of Deer			Total Sample (n)	Males* / 100 Females	Fawns / 100 Females
	Males	Does	Fawns			
1	62	161	151	374	39	94
2	91	185	133	409	49	72
3	7	18	23	48	39	128
4	24	81	59	164	30	73
5	15	47	24	86	32	51
6	93	155	145	393	60	94
7	47	142	166	355	33	117
8	19	72	105	196	26	146
9	31	50	52	133	62	104
10	82	143	97	322	57	68
11	2	8	13	23	25	163
12	7	6	9	22	117	150
13	116	212	227	555	55	107
14	162	343	254	759	47	74
TOTAL	758	1623	1458	= 3839	47	90
PERCENT	(20%)	(42%)	(38%)			

*Males = Yearling males, teen males, mature males and unclassified males.

Yearling Males = Antler Class A, B as per Co-operative Wildlife Management Study.
Teen Males = Antler Class C as per Co-operative Wildlife Management Study.
Mature Males = Antler Class D, E as per Co-operative Wildlife Management Study.

Table 45. Percentage of yearling* and mature males** in the provincial mule deer population based on pre-season field observations, Sept. - Nov. 1985 to 1987

Ecological Zone	1985 % Yearlings	1985 % Mature	1985 Sample Size (n)	1986 % Yearlings	1986 % Mature	1986 Sample Size (n)	1987 % Yearlings	1987 % Mature	1987 Sample Size (n)
Grassland	57	43	670	32	68	1186	36	64	704
Farmland	61	39	239	33	67	468	37	63	372
Parkland***	55	45	31	18	82	99	16	84	68
Fringe***	--	--	3	--	--	7	--	--	3
Forest***	--	--	5	--	--	19	--	--	20
All Zones	58	42	953	32	68	1778	36	64	1153

* Antler classes A and B from the Co-operative Wildlife Management Study

** Antler classes D, E and F

*** Sample sizes for the Parkland, Fring and Forest ecozones are extremely small and percentages are subject to a high degree of error

Table 46. Percentage of mule deer does with and without fawns based on pre-season field observations, Sept. - Nov. 1985 to 1987

% Does With And Without Fawns

Ecological Zone	1985				1986				1987			
	Single	Twins	Triplets	Without Fawn	Single	Twins	Triplets	Without Fawn	Single	Twins	Triplets	Without Fawns
GRASSLAND	59	38	3	43	58	34	3	46	45	52	3	43
FARMLAND	72	26	2	45	66	32	2	48	55	40	5	59
PARKLAND*	59	41	--	62	57	42	1	47	40	58	2	56
FRINGE*	17	83	--	30	17	83	--	68	100	--	--	44
FOREST*	100	--	--	75	86	14	--	46	57	43	--	57
ALL ZONES	62	35	3	44	61	37	3	47	48	48	3	50

* sample sizes for the Parkland, Fringe and Forest ecozones are extremely small and percentages are subject to a high degree of error.

- The strategy that was implemented involved reducing the breeding segment of the population through an antlerless sport harvest, conducted on a quota basis for all the major mule deer zones. This management objective was extremely successful and provided sport hunters with increased recreation opportunity, particularly in 1985 when some zones had a 2 antlerless deer bag limit. As antlerless deer numbers declined and the population structure was stabilized, antlerless quotas were subsequently reduced, as much as 49% in 1987.
- The 1988 mule deer management strategy is different from previous years and involves the following objectives:
  1. In the primary Grassland zones, the mule deer population has been stabilized and the objective will be to manage deer for a moderate population growth, ensuring that the antlerless component does not expand as rapidly as occurred in the mid-1980's. Antlerless quotas will be reduced by 12% in 1988 to accomplish this objective. It is believed that some specific zones have been overharvested with heavy pressure being placed on the doe and fawn segment of the population and antlerless quotas will be eliminated entirely in those areas. However, because most hunters still prefer to shoot bucks, antlerless quotas will remain part of the provincial mule deer harvest strategy, particularly in the high density zones, in an effort to maintain stable buck/doe/fawn ratios and regulate population growth.
  2. To continue to meet sport hunter demand for mature bucks, it will be necessary to ensure that a high proportion of yearling males survive long enough, to be recruited into the older age classes each year. With liberal either-sex quotas, sport harvest pressure on the male segment of the population has been relatively high since 1984. In an effort to manage for both a moderate population growth in those zones where populations have been either reduced or stabilized and ensure the mature buck cohort is not overharvested, the either-sex quotas will be reduced by 9% for 1988. This small reduction will bring the either-sex quotas in line with quotas set in

1984. Coordinated harvest of the male and antlerless components of the population will allow for maintenance of high buck/doe ratios and provide the Saskatchewan hunter with a good opportunity to harvest mature male animals on the either-sex licence.

3. In the peripheral zones, mule deer populations continue to expand and many zones, previously not capable of supporting a licence quota, can now accomodate a limited sport harvest. Quotas in most of these zones will be increased in 1988, but the strategy will include both an either-sex and antlerless component, in order to regulate harvest structure.

- For 1988, total licence quotas will be reduced by 10%, from 10,900 licences to 9,800 licences for all weapon types (Tables 47 & 48). The major mule deer season changes will include the following:
  (a) Either-sex rifle quotas will be increased in WMZ 1, 19 and 46 and reduced in WMZ 2, 3, 6, 9, 10, 13, 14, 24, 26, and 27. A new either-sex rifle season will be offered in WMZ 18, in view of an expanding population. Quotas in all other zones will remain the same as 1987.
  (b) Antlerless rifle quotas will be increased in WMZ 1, 5, and 10 and reduced in WMZ 6 and 19. Quotas in WMZ 7, 8, 12 and 23 will be eliminated completely. All other zones will have quotas similar to 1987.
  (c) Other initiatives will include a communication strategy to encourage the 1000 antlerless hunters in WMZ 10 to take advantage of higher populations on the west and south side of the zone. Hunter activity in this area, relative to the rest of the zone, has been minimal and high deer numbers still warrant a continued antlerless harvest.
  (d) With the introduction of a special draw muzzleloader licence for mule deer in 1986, the number of muzzleloader applicants in the big game draw has increased significantly. Currently, only 1 in 3 hunters that apply, get drawn for the muzzleloading licences, versus 1 in 2 hunters for the November rifle licences and all hunters for the archery licences. In

Table 47. Mule deer licence quotas for rifle seasons, 1984 to 1988.

WMZ	SEASON	1984	1985	1986	1987	1988
1	Either Sex	100	100	100	250	400
	Antlerless	--	75*	75	250	300
2	Either Sex	900	1000	1000	900	700
	Antlerless	1000	3000*	1000	200	200
3	Either Sex	300	300	300	150	50
	Antlerless	--	100	75	--	--
4	Either Sex	100	75	100	150	150
	Antlerless	--	--	150	150	150
5	Either Sex	300	300	300	200	200
	Antlerless	200	300	200	--	100
6	Either Sex	400	400	400	300	250
	Antlerless	200	500	500	200	100
7	Either Sex	300	300	300	150	150
	Antlerless	--	200	200	200	--
8	Either Sex	50	50	50	50	50
	Antlerless	--	50	50	100	--
9	Either Sex	400	500	500	500	400
	Antlerless	600	1000*	500	100	100
10	Either Sex	700	800	800	800	700
	Antlerless	3000	6000*	1200	600	1000
11	Either Sex	--	--	50	50	50
	Antlerless	200	900*	100	100	100
12	Either Sex	150	150	150	100	100
	Antlerless	200	1000	300	200	--
13	Either Sex	400	400	400	600	400
	Antlerless	400	800	800	--	--
14	Either Sex	600	600	600	800	600
	Antlerless	600	2400*	500	--	--
18	Either Sex	--	--	--	--	50
19	Either Sex	150	200	200	250	300
	Antlerless	--	--	150	250	200
23	Either Sex	200	200	250	250	250
	Antlerless	--	--	--	250	--
24	Either Sex	200	200	250	250	150
25	Either Sex	50	150	200	150	150
26	Either Sex	50	200	250	200	150
27	Either Sex	50	150	250	150	100
29	Either Sex	100	100	150	150	150
30	Either Sex	100	100	150	150	150
45	Either Sex	50	50	100	100	100
46	Either Sex	100	100	150	200	250
Totals	Either Sex	5750	6425	7000	6850	6000
	Antlerless	6400	16325	5800	2600	2250
		12150	22750	12800	9450	8250

*Represents the total number of available deer tags; each licenced hunter was offered 2 tags in 1985 (2 deer bag limit).

Table 48. Mule deer licence quotas for primitive weapons seasons, 1987 and 1988.

WMZ	Archery Season	1987	1988	Muzzleloader Season	1987	1988
1+	Either Sex	800	850	Either Sex	100	200
	Antlerless	100	100	Antlerless	100	100
9	Either Sex	150	150	Either Sex	50	50
	Antlerless	50	50	Antlerless	50	50
10	Either Sex	**	**	Either Sex	**	**
	Antlerless	**	**	Antlerless	**	**
12	Either Sex	50	--	Either Sex	--	--
	Antlerless	*	--	Antlerless	--	--
Totals	Either Sex	1000	1000	Either Sex	150	250
	Antlerless	150	150	Antlerless	150	150
		1150	1150		300	400

1+ - Represents 1988 combined zones 1 to 8, 13, 14, 15 (archery only), 18 to 27, 29, 30, 31 (archery only), 45 and 46.

** - Licence quotas combined with zone 9.

an effort to allocate the licences more evenly among the three interest groups, the number of licences available to muzzleloader hunters will increase from 300 to 400 in 1988.

(e) Either-sex and antlerless quotas for archery hunters will remain the same as 1987, but two new zones, WMZ 15 and 31, will be available to archery hunters in 1988, in an effort to harvest some animals out of the coalfield spoilpiles near Estevan.

(f) The season dates for rifle hunters will be contained within a 2 week period in early November to avoid landowner conflicts and provide reasonable hunting opportunity.

D. 1988 MULE DEER SEASON

Mule Deer	Zones 1, 3 to 8, 11, 12, 18, 19, 23 to 27, 29, 30 and 45, including Brokenshell No. 1 and Elbow Wildlife Management Units; and Cypress Hills (West Block) Provincial Park	Nov. 7 - Nov. 12	one mule deer, either sex	- Licence quotas (in brackets) for each zone: 1(400), 2(700), 3(50), 4(150), 5(200), 6(250), 7(150), 8(50), 9(400), 10(700), 11(50), 12(100), 13(400), 14(600), 18(50), 19(300), 23(250), 24(150), 25(150), 26(150), 27(100), 29(150), 30(150), 45(100), 46(200). **Note: Primitive weapons only in Saskatchewan Landing Provincial Park.**
	Zone 46	Nov. 14 - Nov. 19	one mule deer, either sex	
	Zones 2, 9, 10, 13 and 14, including Saskatchewan Landing Provincial Park	Nov. 7 - Nov. 9 or Nov. 10 - Nov. 12	one mule deer, either sex	
Antlerless Mule Deer	Zones 1, 2, 4 to 6, 9 to 11, and 19	Nov. 14 - Nov. 19	one antlerless mule deer	- Licence quotas (in brackets) for each zone: 1(300), 2(200), 4(150), 5(100), 6(100), 9(100), 10(1000), 11(100), 19(200). - "Antlerless Mule Deer" means a doe or a 1988 fawn.
Mule Deer (Archery)	Zones 1 to 8, 13 to 15, 18 to 27, 29 to 31, 45 and 46 combined, including Brokenshell No. 1 and No. 2, Elbow and Lomond Wildlife Management Units; and Cypress Hills (West Block) and Saskatchewan Landing Provincial Parks	Sept. 5 - Oct. 15	one mule deer, either sex	- Licence quotas (in brackets) for each zone: 1 to 8, 13 to 15, 18 to 27, 29 to 31, 45 and 46 combined (350), 9 and 10 combined (150). - Archery licences valid only in the archery season.
	Zones 9 and 10 combined	Sept. 19 - Oct. 1	one mule deer, either sex	
Antlerless Mule Deer (Archery)	Zones 1 to 8, 13 to 15, 18 to 27, 29 to 31, 45 and 46 combined, including Brokenshell No. 1 and No. 2, Elbow and Lomond Wildlife Management Units; and Cypress Hills (West Block) and Saskatchewan Landing Provincial Parks	Sept. 5 - Oct. 15	one antlerless mule deer	- Licence quotas (in brackets) for each zone: 1 to 8, 13 to 15, 18 to 27, 29 to 31, 45 and 46 combined (100), 9 and 10 combined (50).
	Zones 9 and 10 combined	Sept. 19 - Oct. 1	one antlerless mule deer	
Mule Deer (Muzzle-loading Rifles)	Zones 1 to 8, 13, 14, 18 to 27, 29, 30, 45 and 46 combined, including Brokenshell No. 1 and Elbow Wildlife Management Units; Cypress Hills (West Block) and Saskatchewan Landing Provincial Parks; and Zones 9 and 10 combined	Oct. 3 - Oct. 15	one mule deer, either sex	- Licence quotas (in brackets) for each zone: 1 to 8, 13, 14, 18 to 27, 29, 30, 45 and 46 combined (200), 9 and 10 combined (50).
Antlerless Mule Deer (Muzzle-loading Rifles)	Zones 1 to 8, 13, 14, 18 to 27, 29, 30, 45 and 46 combined, including Brokenshell No. 1 and Elbow Wildlife Management Units; Cypress Hills (West Block) and Saskatchewan Landing Provincial Parks; and Zones 9 and 10 combined	Oct. 3 - Oct. 15	one antlerless mule deer	- Licence quotas (in brackets) for each zone: 1 to 8, 13, 14, 18 to 27, 29, 30, 45 and 46 combined (100), 9 and 10 combined (50).

ELK

A. REVIEW OF 1987 HUNTING SEASONS

1. Licence Sales*

	1983	1984	1985	1986	1987
Regular Bulls Only	3187	3698	3240	2819	2198
Special Either-sex	894	784	1085	1241	1288
TOTAL	4081	4482	4322	4060	3486

* Final (June 1) licence sale figures; however all data analysis based on figures available in February

2. Hunting Activity & Harvest

a) Northern Commercial Forest

- With 1586 active hunters, the regular bulls-only season harvest (excluding WMZ 53) of 365 animals in 1987 was similar to the harvest of 372 animals in 1986 (Table 49).
- In WMZ 53, adjacent to Prince Albert National Park, 9 bulls, 11 cows and 3 calves were harvested. This is a special either-sex management hunt designed to reduce depredation in the surrounding farmland. The harvest is considered low because many of the elk did not come out of the park, but traditional harvest is less than 50 animals. The 1987 season provided 853 days of recreation, down from 1,937 in 1986.
- Total days of recreation (excluding WMZ 53) declined from 8,994 in 1986 to 6,991 in 1987. The loss of hunter days could be attributed to fewer hunters in the field and higher success rates requiring less time to harvest an elk.
- No season was held in WMZ 43 last year due to the high harvest in 1986.

b) Special Seasons

i. Moose Mountain Park (WMZ 33 - Licence Quota = 100)

- A telephone survey of elk hunters in Moose Mountain Park indicated a harvest of 56 elk with a harvest structure of 0.69 bulls/cow/0.84 calves (Table 50). Unregulated kill during the past year has not been excessive compared to previous years, but due to low snow fall and good access in

Table 49. Estimated hunter success and harvest pressure during the regular elk season, 1987.

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
48	76	95	14	18.42	14	14.00	1	0.00	361	25.79	0.1426
49	149	188	48	32.21	48	47.60	1	0.00	565	11.77	0.2359
50	31	39	3	9.68	3	2.80	1	0.00	162	54.00	0.0486
53	194	244	22	11.34	22	0.75	1	0.25	853	38.77	0.3077
Total	450	566	87	19.33	87	6.50	1	0.25	1,942	22.32	0.0739
56	610	739	120	19.67	120	117.60	1	2.80	2,831	23.59	0.5988
57	224	272	56	25.00	56	56.00	1	0.00	1,059	18.91	0.3201
58	35	42	8	22.86	8	8.40	1	0.00	162	20.25	0.0721
59	104	126	20	19.23	20	19.60	1	0.00	470	23.50	0.0801
60	115	140	39	33.91	39	39.20	1	0.00	440	11.28	0.1146
61	90	109	22	24.44	22	22.40	1	0.00	378	17.18	0.1243
62	42	50	11	26.19	11	11.20	1	0.00	174	15.82	0.0465
63	55	67	14	25.45	14	14.00	1	0.00	179	12.79	0.0316
64	21	25	3	14.29	3	2.80	1	0.00	64	21.33	0.0180
66	7	8	0	0.00	0	0.00	1	0.00	25	0.00	0.0022
69	28	34	6	21.43	6	5.60	1	0.00	118	19.67	0.0152
Total	1,330	1,613	300	22.56	300	296.80	1	2.80	5,902	19.67	0.0357
Total	1,780	2,179	387	21.7	387	---			7,844	20.2	---
Total (less WMZ 53)	1,586	1,935	365	23.0	365	---			6,991	19.1	---

Table 50. Estimated hunter success and harvest pressure during the special either-sex elk season, 1987.

WMZ	QUOTA	ACTIVE HUNTERS	HARVEST	% SUCCESS	HARVEST STRUCTURE BULL/COW/CALF	HUNTER DAYS	HUNTER DAYS/KILL
6	100	100 (102)*	22 (17)	21% (16.6)	1.60/1/0.00 (1.83/1/0.00)	465 --	21 --
7	150	153 (150)*	52 (44)	33% (29.3)	1.13/1/0.33 --	660 --	13 --
33	100	101 (99)*	64 (56)	64% (56.0)	0.82/1/0.09 (0.69/1/0.24)	319 (301)	5 (5)
50	275	264	96	36%	1.50/1/0.35	1255	13
48**	600	567	194	34%	0.60/1/0.37	2444	13
59	50	UNK***	10	UNK	UNK	UNK	UNK

* Telephone Survey (in brackets)
** Includes WMZ 48, 49, 56 & 57 combined
***UNK = unknown data

the park, hunting continued through the late winter-spring time period.

ii. Fort a la Corne (WMZ 50 - Licence quota = 275)

- The estimated harvest was 96 animals compared to 94 animals in 1986. The harvest structure was estimated at 1.50 bulls/cow/0.35 calves (Table 50).

iii. Porcupine Forest (WMZ 48, 49, 56, 57 - Licence Quota = 600)

- The elk harvest was 194 compared to a harvest of 109 in 1986 (Table 50). The harvest in 1987 was the highest recorded harvest since the special season was established.
- Due to the increasing elk herd the licence quota was increased from 500 to 600 for 1987. Hunter success was 34% compared to a long-term average of about 20%. Hunter days/animal decreased from 18 days/animal in 1986 to 12 days/animal in 1987. The harvest structure at 0.60 bulls/cow/0.37 calves included more antlerless animals than any other special season.

iv. Cypress Hills East & Centre Blocks
(WMZ 6 and 7 - Licence Quota = 100)

- Hunter questionnaire data indicate that 22 elk were harvested in 1987 compared to 34 elk in 1986 (Table 50). A telephone survey of a sample of hunters indicated 17 elk were killed in 1987. The harvest structure from the hunter questionnaire survey is 1.60 bulls/cow/0.00 calves versus 1.83 bulls/cow/0.00 calves reported by the telephone survey.
- There were reports of hunters experiencing difficulty obtaining access to leased and private lands. Hunters claimed that ranchers were letting only a certain number of people on their ranch at one time or prohibiting access to guided hunters only. The telephone survey indicated that all of the hunters found a place to hunt with a reasonable opportunity to see and harvest an elk.

- Unregulated harvest is unknown but thought to be less than 50 animals, annually.

v. Cypress Hills West Block (WMZ 7 - Licence Quota = 150)

- The hunter questionnaire survey indicates that 52 elk were harvested in 1987 compared to 92 in 1986 (Table 50). Hunter success was estimated at 38% compared to 47% in 1986 with a harvest structure of 1.13 bulls/cow/0.33 calves. A telephone survey of a sample of hunters in WMZ 7 indicated 44 elk were harvested (70% harvested in the first split) in 1987. Many of the elk were apparently on posted land and inaccessible to hunters during the 1987 sport season.

vi. Thickwood Hills (WMZ 54)

- There was no season in 1987.
- The harvest in 1986 was 19 elk with a quota of 50 licences. Success was estimated at 37% with a harvest structure of 0.33 bulls/cows/0.17 calves.

vii. Pasquia Hills (Zone 59 - Quota 50)

- No hunter activity information is available but field reports suggest a harvest of approximately 10 animals.

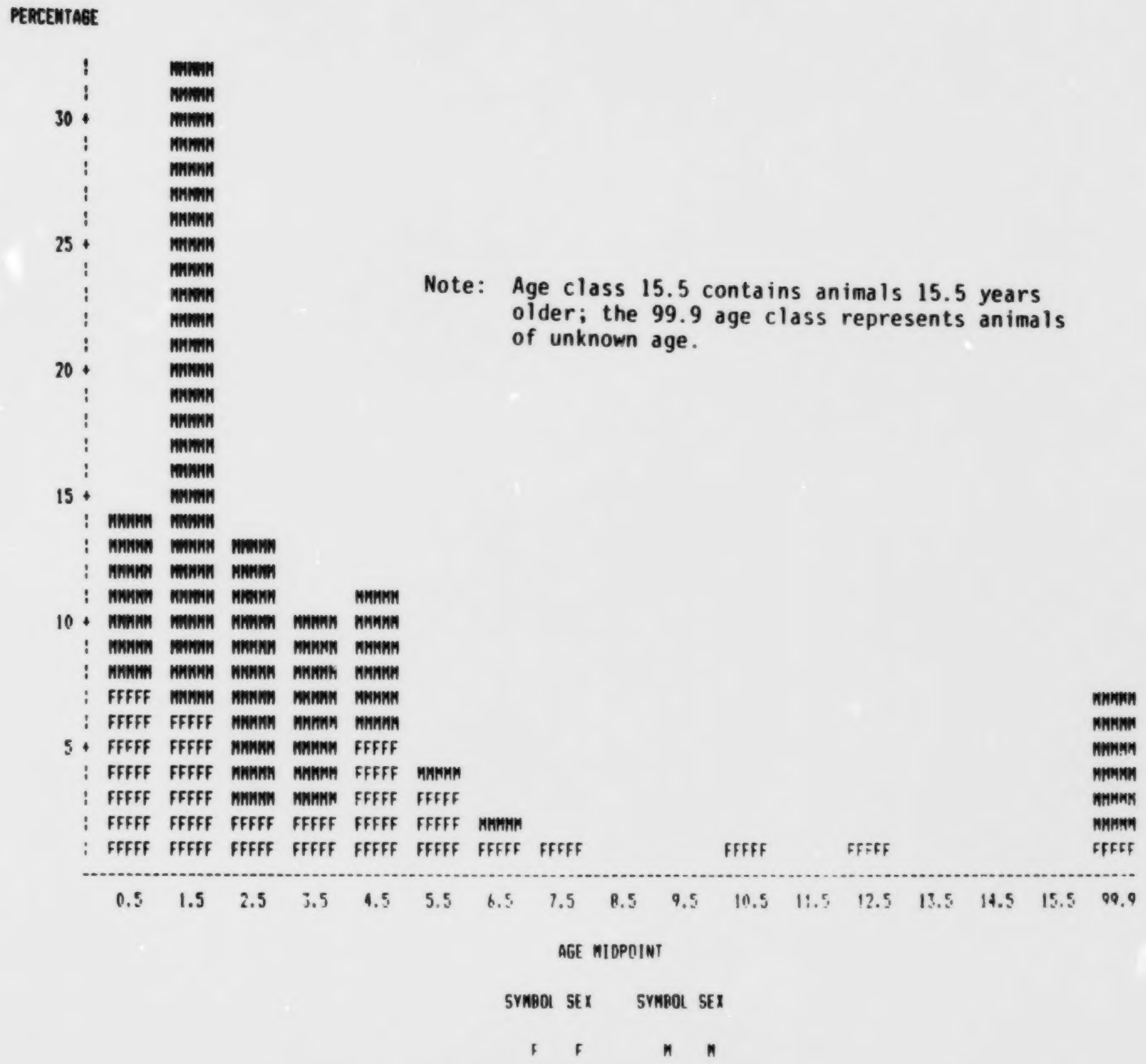
3. Biological Collection Program

- Information on the sex and age class of elk harvested during the special either-sex and regular bulls-only seasons was obtained from 212 tooth samples (Table 51, Figure 8). The majority of the samples came from WMZ 56, 57, 59, 60 and 61 in northeastern Saskatchewan.
- The overall harvest consisted of 61% bulls, 25% cows and 24% calves for a harvest structure of 2.38 bulls/cow/0.54 calves. Analysis by age class indicated that yearling animals comprised 43% of the mature male and 21% of the mature female harvest. Males in the yearling and teen age classes (1.5 to 3.5 years) accounted for 82% of the mature male elk harvest in 1987. Only 18% of the male harvest included prime-age bulls.

Table 51. Sex and age composition of the 1987 elk harvest based on tooth samples.

SEX	AGE Frequency Percent Row Pct Col Pct	0.5	1.5	1.8	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5	11.5	12.5	14.5	15.5	99.9	Total
FEMALE	Frequency	14	11	1	5	5	10	6	2	2	1	1	2	1	3	1	1	2	68
	Percent	6.60	5.19	0.47	2.36	2.36	4.72	2.83	0.94	0.94	0.47	0.47	0.94	0.47	1.42	0.47	0.47	0.94	32.08
	Row Pct	20.59	16.18	1.47	7.35	7.35	14.71	8.82	2.94	2.94	1.47	1.47	2.94	1.47	4.41	1.47	1.47	2.94	
	Col Pct	48.28	16.67	100.00	17.86	21.74	43.48	66.67	50.00	66.67	100.00	50.00	100.00	50.00	100.00	100.00	100.00	14.29	
MALE	Frequency	15	55	0	23	18	13	3	2	1	0	1	0	1	0	0	0	12	144
	Percent	7.08	25.94	0.00	10.85	8.49	6.13	1.42	0.94	0.47	0.00	0.47	0.00	0.47	0.00	0.00	0.00	5.66	67.92
	Row Pct	10.42	38.19	0.00	15.97	12.50	9.03	2.08	1.39	0.69	0.00	0.69	0.00	0.69	0.00	0.00	0.00	8.33	
	Col Pct	51.72	83.33	0.00	82.14	78.26	56.52	33.33	50.00	33.33	0.00	50.00	0.00	50.00	0.00	0.00	0.00	85.71	
Total		29	66	1	28	23	23	9	4	3	1	2	2	2	3	1	1	14	212
		13.68	31.13	0.47	13.21	10.85	10.85	4.25	1.89	1.42	0.47	0.94	0.94	0.94	1.42	0.47	0.47	6.60	100.00

Note: Age class 15.5 contains animals 15.5 years older; the 99.9 age class represents animals of unknown age.



Note: Age class 15.5 contains animals 15.5 years older; the 99.9 age class represents animals of unknown age.

Figure 8. Sex and age composition of the 1987 elk harvest based on tooth samples.

- These harvest results are encouraging since they suggest that the prime-age bulls (4.5 years and older), those animals responsible for most of the breeding, are being adequately protected with the present hunting regime. Field reports of growing populations, particularly in northeastern Saskatchewan, and aerial surveys that record normal calf/cow ratios and a high proportion of yearling bulls, confirm that most adult cows are being bred and that calves are surviving to become yearling and teenage animals. For the hunter, the high percentage of young age class animals in the population, particularly the bull segment and greater vulnerability of these young bulls to artificial elk calls results in higher harvest rates and more recreation days. Provided cows are being bred by prime-age bulls and calf production remains high, elk populations should continue to improve in northern Saskatchewan.

B. POPULATION STATUS

1. Northern Commercial Forest

- Density and population structure surveys were not conducted for elk in the Commercial Forest during the 1987-88 winter.
- In the northeast Forest zones (WMZ 48, 49, 56, 57, 58, and 59), field reports suggest that elk populations are slowly increasing with a sufficient number of mature bulls available for breeding purposes.
- Elk populations are believed to be increasing in WMZ 60 and 61 (Cumberland Delta). There is still a considerable amount of habitat in these two zones which could be occupied by elk and the current management strategy, designed to restrict harvest to bulls and promote herd growth, is warranted for the immediate future.
- Elk populations in WMZ 66 and 69 are stable and the current low harvest is not affecting population growth significantly.
- In WMZ 62 and 64, field reports suggest slightly higher elk populations but levels are not high enough to warrant a change in season structure. In the southern portion of WMZ 63 elk numbers appear to be increasing based on field and numerous crop depredation reports.

2. Southern Wildlife Management Zones

a) Moose Mountain Park (WMZ 33)

- An aerial density survey was not flown in 1988, but the elk population is believed to be stable at about 600 animals. Previous aerial surveys indicate that the population was slowly expanding from 463 ± 40% elk in 1984, 315 ± 21% in 1985, 521 ± 21% in 1986 to 662 ± 17% elk in 1987.

b) Cypress Hills (WMZ 6 and 7)

- The east and centre block population is believed to be stable at about 250 elk.
- A joint aerial survey with the Alberta Fish and Wildlife Division, indicated that the west block winter population has declined from 727 animals in 1986-87 to 616 animals in 1987-88 and is below the long term average of 675 elk.

c) Thickwood Hills (WMZ 54)

- During a February, 1988 aerial reconnaissance of the Thickwood Hills, 103 elk were observed suggesting a higher population than previous years. It is believed there may be approximately 250 animals within the Thickwood Hills area.

d) Fort a la Corne (WMZ 50)

- A stratified random quadrat survey carried out in Fort a la Corne indicated a significant drop in the population to 223 ± 20% from 477 ± 24% in 1983.
- An additional 59 elk were observed outside the survey area; 35 animals along the east side and 24 animals in the northwest corner. It is believed that these animals move back and forth to the Wildlife Management Unit and would consequently be accessible to the sport hunter each fall.
- In WMZ 43, 65 elk were observed but these animals are not considered part of the elk herd in Fort a la Corne because they reside year-round, outside of the Wildlife Management Unit.

C. 1988 MANAGEMENT OBJECTIVES

1. The elk population in the Porcupine Forest (WMZ 48, 49, 56 and 57) still shows sign of growth and expansion into new areas in the vicinity of Hudson Bay. The existing selective harvest strategy uses a combination of a unrestricted bulls-only and limited either-sex quota season to meet sport hunter demand and promote population growth. This management strategy will be continued for the immediate future.

2. The population in WMZ 59 appears to be growing but until more is known about this relatively small elk herd, the current quota of 50 either-sex licences and bulls-only season should be maintained.

3. The management strategy in WMZ 58, 60 to 64, 66 and 69 will be to promote population growth using a restrictive bulls-only hunting regime.

4. In the southern portion of WMZ 63, elk populations appear to be expanding and could support a 50 licence quota sport hunt in 1988. In WMZ 50 (north of Highway 55) and 62 immediately adjacent to WMZ 63, the bulls-only season structure will remain in effect. It is known that elk from WMZ 50, 62 and 63 cross back and forth but the majority of the animals appear to be in WMZ 63 or the Fort a la Corne forest during the hunting season.

5. Southern Areas

   a) Moose Mountain Park (WMZ 33)
      - No survey was carried out in 1987-88, but field reports suggest that the population is stable and consequently, the quota of 100 licences will be maintained for 1988.

   b) Fort a la Corne (WMZ 50)
      - Aerial survey and harvest data (regulated and unregulated) indicate that the Fort a la Corne elk population has declined significantly since 1983. To ensure that Fort a la Corne retains

a viable elk population, hunting by sport hunters must be restricted. The road closure program, implemented in 1987, is designed to control opportunistic vehicle access to elk populations and maintain a high quality sport hunt for the future.

- Fort a la Corne is considered to be a preferred and highly aesthetic place to hunt elk in Saskatchewan, principally because of the September calling season. Hunting must be directed at the unproductive segment of the herd if the population is to show signs of growth. There is no indication that there is a problem with reproductive output.
- The sport hunter licence quota for 1988 will be reduced to 100 licences, the late season eliminated to protect female elk for breeding purposes and the portions of zone WMZ 43 west of highway #35 and north of highway #335 will be added to the legal hunting area to take advantage of the animals in WMZ 43.

c) Cypress Hill West Block (WMZ 7)

- The number of licences will be reduced from 150 to 100 because of the decline in the winter population.

d) Cypress Hill Centre and East Blocks (WMZ 6 and 7)

- Due to the access problems reported by WMZ 6 and 7 sporthunters, the quota will be reduced from 100 to 50 licences in 1988. As well, the season will be delayed by 2 weeks to secure additional access to privately-controlled land.

e) Thickwood Hills (WMZ 54)

- The 1987 survey indicates a relatively good population and a season with a quota of 50 licences is warranted for 1988.

D. 1988 ELK SEASON

Special Elk	Zone 6 and that portion of Zone 7 east of Highway No. 271 and Grid Road No. 615	Oct. 31 - Nov. 5	one elk, either sex	- Licence quotas (in brackets) for each zone: 6 and the east portion of 7 combined (50), the west portion of 7(100), 33(100), 43 and 50 combined (100), 48, 49, 56 and 57 combined (600), 54(50), 59(50), 63(50). Note: Some portions of the Meeting and Royal Lake PFRA pastures in Zone 54 will be closed to elk hunting. Watch for "No Hunting" signs.
	That portion of Zone 7 west of Highway No. 271 and Grid Road No. 615, including Cypress Hills (West Block) Provincial Park	Oct. 17 - Oct. 29	one elk, either sex	
	Zone 33, including Moose Mountain Provincial Park	Oct. 24 - Oct. 29	one elk, either sex	
	That portion of Zone 43 west of Highway No. 35 and north of Highway No. 335 and that portion of Zone 50 south of Highway No. 55, including Fort a la Corne Wildlife Management Unit	Aug. 29 - Sept. 17	one elk, either sex	
	Zones 48, 49, 56 and 57 combined, including Greenwater Lake Provincial Park; Zone 59; and that portion of Zone 63 south of the Torch River	Oct. 17 - Oct. 22	one elk, either sex	
	That portion of Zone 54 south of Highway No. 3	Nov. 14 - Nov. 19	one elk, either sex	
Regular Elk (Sask. Residents Only)	Zones 48, 49, 50 (north of Highway 55), 56 to 64, 66 and 69, including Leaf Lake Wildlife Management Unit and the northeast portion of Meadow Lake Provincial Park north of the 17th base line	Sept. 12 - Sept. 24	one antlered elk	- "Antlered Elk" means any elk having an antler or antlers at least 15 centimetres in length as measured from the outside of the skull to the tip. - Successful applicants for a special elk licence are not eligible to purchase a regular elk licence. Note: Watch for signs in Meadow Lake Provincial Park. Note: Hunters will be restricted to designated trails within the Cookson Wildlife Management Unit.
	Zone 53, including Cookson Wildlife Management Unit	Nov. 21 - Dec. 10	one elk, either sex	

PRONGHORN ANTELOPE

A. REVIEW OF 1987 HUNTING SEASONS

- A total of 3,461 rifle and 252 archery licences were sold in 1987, however, all data analysis is based on figures available in February 1988.
- In 1987, 3,382 active rifle and 142 active archery hunters harvested 2,950 antelope compared to 2,533 animals in 1986 (Table 52). Hunters spent 6,811 days in the field, an 8% increase from 6,282 days in 1986. Success rates were similar to previous years at 86% and 29% for rifle and archery hunters, respectively (Tables 53 and 54). The extended season dates, which overlapped with the mule deer season and increased licence quotas contributed to the increase in harvest and recreation days.
- The rifle season harvest structure was 2.27 bucks/doe/0.15 kids in the Grassland zones and 2.11 bucks/doe/0.21 kids in the Farmland zones. These ratios differ slightly from 1986 but the earlier horn sheath drop may have influenced the 1987 buck/doe harvest ratios. Hunter days/animal for rifle hunters was similar to 1986, at 2 days/antelope. Good weather conditions and no precipitation throughout the antelope seasons resulted in high success rates. The highest licence quotas were allocated for WMZ 2, 3 and 9 since these zones support the highest antelope populations.
- In 1987, the rifle season was extended to 15 days in length, overlapping with the mule deer season. The extra days were designed to accommodate those antelope hunters who also held a mule deer licence and wished to hunt both species during a single hunting trip to southwest Saskatchewan. Based on hunter questionnaire survey information, 70%, 20% and 10% of the hunters participated in the first (October 29 - October 31), second (November 2 - November 7) and third (November 9 - November 14) week of the season respectively (Table 55). Although most of the activity occurred in the first week, hunters interviewed in the field appreciated the longer season option and recommended that it be continued in the future. Because antelope licences are set on the basis of quotas, and success rates presently exceed 85%, there was little danger of overharvesting the population.

Table 52. Provincial antelope harvest, hunting success and pressure, 1987.

	# Actual Hunters	# Zone Hunters	# Success Hunters	% Hunter Success	Harvest	Harvest Structure			Hunter Days	Hunter Days/ Animal	Hunter Days/km² In Zone
						Males	Females	Young			
Archery											
Grassland	122	168	34	27.8	34	6.50	1	0.00	538	15.82	0.0083
Farmland	20	28	7	35.0	7	2.00	1	0.00	97	13.86	0.0010
Regular/Rifle											
Grassland	3,163	3,166	2,719	85.9	2,719	2.27	1	0.15	5,824	2.1	0.0898
Farmland	219	219	190	86.7	190	2.11	1	0.21	352	1.8	0.0038
Total	3,524	3,581	2,950	83.7	2,950	2.29	1	0.16	6,188	2.3	---

Table 53. Estimated hunter success and harvest pressure during the antelope rifle season, 1987.

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
01	50	50	47	94.00	47	7.50	1	0.00	87	1.85	0.0104
02	832	833	753	90.50	753	2.18	1	0.12	1,434	1.90	0.1347
03	636	637	532	83.65	532	2.37	1	0.21	1,192	2.24	0.2774
04	50	50	40	80.00	40	6.00	1	0.00	61	1.53	0.0075
06	71	71	65	91.55	65	4.11	1	0.11	100	1.54	0.0238
07	218	219	158	72.48	158	3.04	1	0.21	454	2.87	0.2395
08	200	200	176	88.00	176	2.58	1	0.06	350	1.99	0.1031
09	493	493	438	88.84	438	2.30	1	0.17	955	2.18	0.2780
10	169	169	154	91.12	154	2.78	1	0.30	293	1.90	0.0826
12	224	224	193	86.16	193	1.85	1	0.07	400	2.07	1.1627
14	220	221	160	72.73	160	0.92	1	0.15	498	3.11	0.0892
Total	3,163	3,166	2,718	85.93	2,718	2.27	1	0.15	5,824	2.14	0.0898
19	71	71	60	84.51	60	1.67	1	0.47	141	2.35	0.0152
24	47	47	43	91.49	43	3.00	1	0.00	72	1.67	0.0149
25	52	52	48	92.31	48	3.50	1	0.00	68	1.42	0.0116
26	48	48	39	81.25	41	1.18	1	0.18	70	1.71	0.0158
Total	219	219	190	86.76	191	2.11	1	0.21	352	1.84	0.0038

Table 54. Estimated hunter success and harvest pressure during the antelope archery season, 1987.

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
01	2	3	0	0.00	0	0.00	1	0.00	12	0.00	0.0014
02	11	15	1	9.09	1	0.00	1	0.00	51	51.00	0.0047
03	4	6	0	0.00	0	0.00	1	0.00	10	0.00	0.0023
04	3	5	1	33.33	1	1.13	1	0.00	14	14.00	0.0017
05	6	8	0	0.00	0	0.00	1	0.00	17	0.00	0.0028
06	11	16	3	27.27	3	2.00	1	0.00	42	14.00	0.0100
07	2	3	2	100.00	2	0.00	1	0.00	9	4.50	0.0047
08	11	16	6	54.55	6	5.65	1	0.00	48	8.00	0.0141
09	10	14	5	50.00	5	4.52	1	0.00	36	7.20	0.0104
10	25	35	10	40.00	10	10.17	1	0.00	127	12.70	0.0358
11	3	5	1	33.33	1	1.13	1	0.00	10	10.00	0.0101
12	6	8	2	33.33	2	2.26	1	0.00	19	9.50	0.0552
13	20	28	1	5.00	1	1.13	1	0.00	115	115.00	0.0281
14	6	8	1	16.67	1	1.13	1	0.00	28	28.00	0.0050
Total	122	168	34	27.87	34	6.50	1	0.00	538	15.82	0.0083
15	1	1	0	0.00	0	0.00	1	0.00	1	0.00	0.0001
18	3	5	1	33.33	1	1.13	1	0.00	16	16.00	0.0021
19	4	6	1	25.00	1	1.13	1	0.00	20	20.00	0.0021
23	4	6	0	0.00	0	0.00	1	0.00	18	0.00	0.0031
24	2	2	0	0.00	0	0.00	1	0.00	9	0.00	0.0018
25	3	5	5	100.00	5	1.00	1	0.00	20	4.00	0.0034
26	3	5	0	0.00	0	0.00	1	0.00	12	0.00	0.0027
Total	20	28	7	35.00	7	2.00	1	0.00	97	13.86	0.0010

Table 55. Hunter participation in the 1987 extended antelope season by week

Zone	Percentage of hunters by week Week of Oct. 29	Week of Nov. 2	Week of Nov. 9
1	67%	20%	13%
2&5	70	20	10
3	72	18	10
4	81	13	6
6	88	6	6
7	69	19	12
8&11	75	18	7
9	69	23	8
10	68	16	16
12&13	71	16	13
14	60	27	13
All Zones Combined	70	20	10

B. POPULATION STATUS

- The July 1988 antelope survey consisted of flights to estimate the density and sex-age composition of antelope herds in traditional survey blocks located in WMZ 2, 3 an 9. Antelope population densities are estimated on the basis of transect surveys within these survey blocks.
- Based on the 1988 surveys, kid:doe ratios range from 0.52 to 0.79 kids/doe (Table 56). With all survey blocks combined the mean ratio of 0.65 kids/doe was 32% lower than 1986 (0.96) and was 10% below the 1981-1987 average of 0.72 kids/doe (Table 57). Kid production was excellent in 1987 as a result of a mild winter and ideal spring fawning conditions with no severe weather to reduce post-partum fawn survival. A higher proportion of yearling females in the 1988 population and poor farm survival as a result of spring drought conditions have contributed to lower kid/doe ratios in this year's survey. Buck:doe ratios were 19% lower than in 1986 and yearling bucks were found to constitute 38% of the male sample in 1988.
- Population densities estimated by transect aerial surveys in 1984 to 1986 and 1988 demonstrate a progressive increase in antelope numbers on the southwest Saskatchewan survey blocks. The 1988 transect and sex-age survey and field reports suggest the provincial antelope population is growing steadily despite lower kid/doe ratios.
- Of particular interest is the variation of kid/mature doe (+2 years) ratios between 1983 and 1988 (Table 58). If yearling females (using the procedure of identifying yearling bucks and assuming the same number of yearling females) are excluded, the ratio of 1.05 kids/doe in 1983 declined dramatically in 1984 (0.93 kids/doe) and 1985 (0.83 kids/doe), rebounded in 1986 (1.11 kids/doe) and 1987 (1.26 kids/doe) under ideal spring fawning conditions and then declined again in 1988 (0.82 kids/doe). These ratios suggest that the 1984, 1985, and 1988 summer droughts in southwestern Saskatchewan may have had a major negative impact on productivity and be partially responsible for lower overall kid/doe ratios.

Table 56. Sex and age composition of antelope herds observed during aerial surveys, July 1988

SURVEY* BLOCK	YEARLING MALES	ADULT MALES	YEARLING** FEMALES	ADULT FEMALES	KIDS	TOTAL ANIMALS (n)	KIDS: DOE	BUCKS: DOE	KIDS:*** ADULT DOE
2a	92	104	92	262	278	828	0.79	0.55	1.06
2b	56	69	56	202	186	569	0.72	0.48	0.92
3a	77	169	77	406	254	983	0.52	0.51	0.63
9a	28	65	28	139	108	368	0.65	0.56	0.78
Total	253	407	253	1009	826	2748	0.65	0.52	0.82

* These survey blocks represent areas that were traditionally censused during the transect aerial survey.

** Because yearling females cannot be distinguished from adult females during aerial surveys, this age category is defined using the procedure of identifying yearling males and assuming the same number of yearling females in the total female segment of the observed population.

*** Adult does represent mature animals 2 years of age and older.

Table 57. Antelope kid:doe ratios estimated by July aerial surveys, 1981-1988

WMZ	1981	1982	1983	1984	1985	1986	1987	1988
1	0.71	0.76	0.50	N/A	0.25	---	---	---
2	0.63	0.46	0.86	0.52	0.58	0.83	1.06	0.76
3, 7, 8	0.71	0.51	0.59	0.51	0.61	0.88*	0.95*	0.52*
6	0.53	0.12	2.10	0.44	0.61	---	---	---
9, 10	0.86	0.50	0.88	0.71	0.70	0.78**	0.83**	0.65**
11-14	0.61	0.76	1.22	0.60	0.97	---	---	---
19, 22, 24, 29	0.56	0.77	---	---	---	---	---	---
26	0.80	0.48	0.68	0.63	0.64	---	---	---
Average	0.69	0.51	0.85	0.56	0.63	0.84	0.96	0.65

Provincial kid:doe ratios from July aerial surveys, 1965-1980:

1965	1966	1967	1968	1969	1970	1971	1972	1973
0.54:1	0.85:1	0.82:1	0.74:1	0.87:1	0.77:1	0.70:1	0.60:1	0.68:1

1974	1975	1976	1977	1978	1979	1980
0.56:1	0.64:1	0.81:1	0.65:1	0.74:1	0.90:1	0.68:1

* Represents the kid:doe ratio from WMZ 3 only.
**Represents the kid:doe ratio from WMZ 9 only.

Table 58. Antelope Kid:Mature Doe (2+ yrs) ratios estimated by July aerial surveys, 1983-1988*

	Yearling Males	Adult Males	Yearling** Females	Adult Females	Kids	Kids:Mature Does
1983	90	165	90	467	492	1.05
1984	211	190	211	502	465	0.93
1985	95	164	95	476	394	0.83
1986	53	78	53	221	186	1.11
1987	169	287	169	543	686	1.26
1988	253	407	253	1009	826	0.82

* Includes data from only those survey blocks where yearling males were segregated by observers.

** Yearling females are distinguished using the procedure of identifying yearling males and assuming the same number of yearling females in the female segment of the observed population.

C. MANAGEMENT OBJECTIVES

- The antelope population in Saskatchewan has been increasing since 1984 as a result of relatively mild winters and years of good to excellent kid survival.
- Landowners throughout the antelope range (Grassland and Farmland zones) have expressed concern about depredation on field crops. This problem is one that the department will need to take into consideration in future management strategies. The high population densities in some zones and loss of native range may be contributing to depredation problems.
- It appears that antelope are attracted to agricultural produce during the fall, winter and spring periods where crops are planted in close proximity to wintering areas. Mild winters with very little snow make this new growth attractive and available to large herds of antelope.
- The species population objectives set by the department for the mid-1980's are presently being met but hunting demand still exceeds the supply of animals. Quotas have been increased annually in response to population growth but the large number of licence applicants suggest hunting demand may remain unsatisfied for this species in coming years.

D. 1988 ANTELOPE SEASON

- An increase of 1075 either-sex licences is warranted in licence quota allocation for the 1988 antelope rifle season. The total quota of 4550 licences, available in WMZ 1 to 14, 19 and 23 to 26, represents a 31% increase from 1987 allocation levels (Table 59). The quota for antelope archery licences in WMZ 1 to 15, 18, 19 and 23 to 26 remains at 300 for 1988.
- In 1987, a high percentage of the antelope bucks shed their horn sheaths by the first week in November. Hunters wishing an opportunity to harvest a buck with horns had to hunt in the first three days of the season and in some cases they observed bucks with only 1 horn. Most hunters suggested that an earlier opening date would allow greater opportunity to harvest a mature buck.

Table 59. Antelope licence quotas, 1986-1988

	REGULAR			ARCHERY		
WMZ	1986	1987	1988	1985	1986	1988*
1	50	50	100	WMZ's 1-15, 18,19, 23-26 (300)	WMZ's 1-15, 18,19, 23-26 (300)	WMZ's 1-15, 18, 19, 23-26 (300)
2 & 5	750	850	1100			
3	600	650	750			
4	50	50	75			
6	50	75	100			
7	200	250	325			
8 & 11	150	200	275			
9	400	500	600			
10	125	175	300			
12 & 13	200	225	300			
14	200	225	300			
19 & 23	50	75	100			
24	50	50	75			
25	50	50	75			
26	50	50	75			
Total	2975	3475	4550	300	300	300

- The 1988 season will open on October 27, 2 days earlier than previous years, to reduce the number of antelope that have shed their horn sheaths. The exception will be WMZ 3 where a previous agreement with area ranchers dictates an October 29 opening date.

Antelope (tentative)	Zones 1, 2, 4 to 14, 19 and 23 to 26, including Saskatchewan Landing Provincial Park	Oct. 27 - Nov. 19	one antelope, either sex	- Antelope licence quotas will be set after July aerial surveys. **Note:** Primitive weapons only in Saskatchewan Landing Provincial Park.
	Zone 3	Oct. 29 - Nov. 19	one antelope, either sex	
Antelope (Archery) (tentative)	Zones 1 to 15, 18, 19 and 23 to 26, including Saskatchewan Landing Provincial Park	Sept. 5 - Oct. 15	one antelope, either sex	- Antelope archery licences are valid in any open zone during the archery season only.

BLACK BEAR

A. REVIEW OF 1987 HUNTING SEASON

1. Licence Sales*

Licence Type	1985	1986	1987	% Change
1st Resident	3601	4304	3817	-11%
1st Canadian Resident	67	95	92	-3%
1st Non-Resident	380	634	891	+40%
Sub-total	4048	5033	4800	-5%
2nd Resident	319	460	393	-14%
2nd Canadian Resident	3	6	12	+100%
2nd Non-Resident	22	115	123	+7%
Sub-total	344	581	528	-9%
Free Bear Tag	3142	2489	2375	-5%
Total	7534	8103	7703	-5%
(excluding free tag)	(4392)	(5614)	(5328)	(5%)

*Final (June 1) sale figures; however all data analysis based on figures available in February.

- First licence sales for the 1987 spring and fall bear seasons declined slightly from 5,033 in 1986 to 4,800 in 1987.
- There were 528 second bear licences issued in 1987, a small decrease from 589 licences sold in 1986. Approximately 10% of first licence holders purchased a second licence.
- In addition, 2,375 free bear permits valid for WMZ 58-61 during the spring and fall bear seasons were provided to 1,456 hunters. While the number of hunters obtaining free bear licences between 1984 and 1987 has remained constant, the actual number of free bear licences has steadily declined due to the allocation procedure.

2. Hunting/Harvest

- The provincial harvest in 1987 was estimated to be 1,671 animals, a 30% decline in harvest from 1986 (Table 60). The 1987 harvest, however, represents only a 4% decline from the 1984 to 1986 average harvest of 1,714 bears.
- Hunter success was estimated to be 36% and 55% for first and second licence holders, respectively, compared to 37% for holders of both licence types in 1986 (Tables 61 and 62). Only 21% of the free licence holders were successful in harvesting a bear, primarily in conjunction with a fall moose hunt (Table 63).
- Bear hunting supplied an estimated 20,385 hunter days of recreation, a small decline from 1986 but similar to 1985. Thirty percent of the harvest occurred during the fall bear season compared to 44% in 1986, 30% in 1985, and 44% in 1984. The spring season still comprises the major portion of the annual bear harvest.
- The provincial harvest structure was 2.03 boars/sow/0.22 cubs. This harvest structure has not differed significantly during the past four years. The 1986, 1985 and 1984 harvest ratios were 2.19 boars/sow/0.48 cubs, 2.62 boars/sow/0.19 cubs, and 2.17 boars/sow/0.18 cubs, respectively.

B. POPULATION STATUS

- Bear density information is unavailable, but field reports suggest the bear population is comparable to 1987 population levels.
- Analysis of bear tooth samples submitted from northeast Saskatchewan in 1985 and northwest Saskatchewan in 1986 suggest a relatively young bear population with the potential for growth, but sample sizes are small. It is possible that low harvest rates on older age class animals may be indicative of a population with low prime-age cohorts, that may ultimately affect reproduction, but additional tooth samples from the 1988 bear harvest are required before undertaking a complete assessment of the sex and age structure of northern bear populations.

Table 60. Provincial bear harvest and hunter activity by ecological zone, 1984 to 1987

Ecological Zone	Harvest 1984	Harvest 1985	Harvest 1986	Harvest 1987	Percent Hunter Success 1984	Percent Hunter Success 1985	Percent Hunter Success 1986	Percent Hunter Success 1987
Parkland	89	51	93	74	58	29	44	37
Fringe	348	208	460	278	50	28	48	39
Forest	1,325	764	1,810	1,310	43	18	34	33
Shield	16	15	28	9	43	35	48	21
Total	1,778	1,039	2,391	1,671	45	20	37	33

Ecological Zone	Hunter Days 1984	Hunter Days 1985	Hunter Days 1986	Hunter Days 1987	Hunter Days/Animal 1984	Hunter Days/Animal 1985	Hunter Days/Animal 1986	Hunter Days/Animal 1987
Parkland	446	705	1,015	812	5	14	11	11
Fringe	1,682	3,421	4,214	2,741	5	16	9	10
Forest	7,952	16,606	20,275	16,647	6	22	11	13
Shield	109	190	227	185	7	12	8	21
Total	10,189	20,922	25,732	20,385	6	20	11	12

Table 61. Estimated 1st bear licence harvest and hunter activity, 1987.

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
37	109	123	42	38.53	42	6.00	1	0.00	498	11.86	0.0440
42	11	12	0	0.00	0	0.00	1	0.00	27	0.00	0.0036
43	66	75	27	40.91	27	1.67	1	0.33	222	8.22	0.0327
Total	186	210	69	37.10	69	3.40	1	0.20	747	10.83	0.0075
48	81	96	21	25.93	21	6.00	1	0.00	303	14.43	0.1197
49	101	120	30	29.70	30	0.67	1	0.00	420	14.00	0.1753
50	175	207	54	30.86	54	1.43	1	0.14	780	14.44	0.2340
51	43	51	18	41.86	18	1.50	1	0.50	174	9.67	0.0605
53	96	114	48	50.00	48	1.00	1	0.00	341	7.10	0.1230
54	63	75	30	47.62	30	2.33	1	0.00	263	8.77	0.0461
55	81	96	33	40.74	33	4.50	1	0.00	248	7.52	0.0661
Total	641	759	234	36.51	234	1.62	1	0.07	2,528	10.80	0.0962
56	417	486	132	31.65	132	2.64	1	0.36	1,848	14.00	0.3909
57	229	267	87	37.99	87	3.67	1	0.17	979	11.25	0.2959
58	64	75	9	14.06	9	2.00	1	0.00	273	30.33	0.1216
59	361	420	111	30.75	111	2.70	1	0.00	1,558	14.04	0.2657
60	144	168	36	25.00	36	2.67	1	0.33	602	16.72	0.1568
61	67	78	15	22.39	15	0.33	1	0.33	258	17.20	0.0848
62	52	60	18	34.62	18	4.00	1	1.00	285	15.83	0.0763
63	95	111	57	60.00	57	1.83	1	0.33	452	7.93	0.0798
64	52	60	18	34.62	18	2.00	1	0.00	177	9.83	0.0499
65	31	36	21	67.74	21	1.33	1	0.00	144	6.86	0.0220
66	95	111	45	47.37	45	2.50	1	0.25	416	9.24	0.0368
67	317	369	162	51.10	162	2.19	1	0.19	1,309	8.08	0.1508
68	100	117	39	39.00	39	1.40	1	0.20	489	12.54	0.1176
69	121	141	57	47.11	57	3.50	1	0.25	456	8.00	0.0588
70	23	27	15	65.22	15	3.00	1	1.00	101	6.73	0.0118
71	23	27	15	65.22	15	1.50	1	0.00	98	6.53	0.0054
72	26	30	9	34.62	9	9.00	1	0.00	68	7.56	0.0036
73	26	30	6	23.08	6	6.00	1	0.00	90	15.00	0.0019
Total	2,244	2,613	852	37.97	852	2.42	1	0.22	9,602	11.27	0.0581
74	13	15	3	23.08	3	0.00	1	3.00	45	15.00	0.0009
75	20	24	6	30.00	6	6.00	1	0.00	110	18.33	0.0019
76	10	12	0	0.00	0	0.00	1	0.00	30	0.00	0.0003
Total	43	51	9	20.93	9	6.00	1	3.00	185	20.56	0.0010

Table 62. Estimated 2nd bear licence harvest and hunter activity, 1987.

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >--- Males	Females	Young	Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
37	13	13	5	38.46	5	1.00	1	0.00	52	10.40	0.0045
43	3	3	0	0.00	0	0.00	1	0.00	13	0.00	0.0019
Total	16	16	5	31.25	5	1.00	1	0.00	65	13.00	0.0006
48	5	5	3	60.00	3	0.00	1	2.60	10	3.33	0.0039
49	10	10	10	100.00	10	2.00	1	1.00	36	3.60	0.0150
50	20	21	13	65.00	13	0.67	1	0.00	70	5.38	0.0210
51	2	3	0	0.00	0	0.00	1	0.00	5	0.00	0.0017
53	22	23	13	59.09	13	1.50	1	0.00	47	3.62	0.0169
54	5	5	3	60.00	3	0.00	1	0.00	23	7.67	0.0040
55	5	5	3	60.00	3	0.00	1	0.00	21	7.00	0.0056
Total	69	73	44	63.77	44	0.88	1	0.25	213	4.84	0.0081
56	37	39	18	48.65	18	2.50	1	0.00	85	4.72	0.0179
57	42	44	21	50.00	21	0.60	1	0.00	143	6.81	0.0432
59	15	16	5	33.33	5	0.00	1	0.00	80	16.00	0.0136
60	12	13	5	41.67	5	2.60	1	2.60	62	12.40	0.0161
62	5	5	5	100.00	5	5.20	1	0.00	34	6.80	0.0091
63	15	16	5	33.33	5	5.20	1	0.00	64	12.80	0.0113
64	7	8	3	42.86	3	0.00	1	0.00	49	16.33	0.0138
65	2	3	0	0.00	0	0.00	1	0.00	26	0.00	0.0039
66	10	10	10	100.00	10	1.00	1	0.00	44	4.40	0.0039
67	35	36	23	65.71	23	0.80	1	0.00	125	5.43	0.0144
68	15	16	8	53.33	8	2.00	1	0.00	42	5.25	0.0101
69	25	26	18	72.00	18	0.75	1	0.00	102	5.67	0.0131
70	2	3	0	0.00	0	0.00	1	0.00	8	0.00	0.0009
71	2	3	3	100.00	3	2.60	1	0.00	3	1.00	0.0001
Total	226	237	125	55.31	125	1.14	1	0.05	867	6.94	0.0052

Table 63. Estimated free bear licence harvest and hunter activity, 1967.

WMZ	# Actual Hunters	# Zone Hunters	# Succ. Hunters	% Hunter Success	Harvest	---< Harvest Structure >---			Hunter Days	Hunter Days / Animal	Hunter Days/KM2 In Zone
						Males	Females	Young			
58	226	236	16	7.08	16	16.26	1	0.00	1,077	67.31	0.4797
59	739	772	220	29.77	244	1.64	1	0.09	3,303	13.54	0.5634
60	288	301	57	19.79	65	24.39	1	40.66	1,114	17.14	0.2903
61	202	211	8	3.96	8	0.00	1	0.00	683	85.38	0.2246
Total	1,455	1,520	301	20.69	333	1.92	1	0.50	6,178	18.55	0.0374

C. CURRENT ISSUES

1. Population Structure

- Historically, the black bear was viewed as a predator and a nuisance wildlife species. In recent years, bears have been elevated in status, and are now recognized as a big game animal. The sex-age harvest information obtained from northeast Saskatchewan in 1985 and northwest Saskatchewan in 1986 provides preliminary information on the bear population structure (Tables 64 and 65, Figures 9 and 10).
- Sub-adults (1.5-3.5 year age classes) in the samples comprised 38% and 47% of the 1985 and 1986 collections, respectively. Prime-aged bears (4.5-12.5 year age classes), with the highest reproductive capability, comprised 55% and 48% of the sample, respectively. In the 1985 sample, 7% of the animals were in age classes 13.5 years and greater compared to 5% of the 1986 sample. All age class percentages would be lower if the "young of the year" age class, which is present in the live population, were included, but this age class is not generally present in the sport harvest because hunters select for older bears. Trophy bears include the 8.5 + age classes and represent 23% of the 1985 sample and 15% of the 1986 sample. Nuisance bears comprised a portion of each collection sample and contribute to a disproportionately higher number of sub-adults in the harvest.
- These preliminary data do not support concerns raised by hunters after the 1987 season, that bear populations are declining and that there are fewer larger bears available to the sport hunter than in previous years. Selective harvest of large bears can influence local population densities but no specific data exist to warrant a decreased bag limit in 1988.

2. Elimination of Free Bear Licences - WMZ 58-61

- The free bear licence program was initiated in 1984 after black bears were documented as significant predators of neonatal moose calves. The intent of the program was to promote harvest of bears in WMZ 58 to 61 and indirectly reduce summer moose calf predation. Recent moose surveys in these zone indicate moose calf:cow ratios have improved over the 4 years of the program and suggest that the free bear licences have contributed to higher calf survival.

Table 64. Sex and composition of the 1985 bear harvest from northeastern Saskatchewan as calculated from tooth samples.

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SEX       YR_CLASS

FREQUENCY|
PERCENT  |
ROW PCT  |
COL PCT  |    1.5|    2.5|    3.5|    4.5|    5.5|    6.5|    7.5|  TOTAL
---------+-------+-------+-------+-------+-------+-------+-------+
FEMALE   |      1|      1|      5|      1|      2|      8|      0|     24
         |   2.13|   2.13|  10.64|   2.13|   4.26|  17.02|   0.00|  51.06
         |   4.17|   4.17|  20.83|   4.17|   8.33|  33.33|   0.00|
         |  50.00|  33.33|  38.46|  50.00|  40.00|  88.89|   0.00|
---------+-------+-------+-------+-------+-------+-------+-------+
MALE     |      1|      2|      8|      1|      3|      1|      2|     23
         |   2.13|   4.26|  17.02|   2.13|   6.38|   2.13|   4.26|  48.94
         |   4.35|   8.70|  34.78|   4.35|  13.04|   4.35|   8.70|
         |  50.00|  66.67|  61.54|  50.00|  60.00|  11.11| 100.00|
---------+-------+-------+-------+-------+-------+-------+-------+
TOTAL           2       3      13       2       5       9       2      47
             4.26    6.38   27.66    4.26   10.64   19.15    4.26  100.00

(CONTINUED)
                         TABLE OF SEX BY YR_CLASS

SEX       YR_CLASS

FREQUENCY|
PERCENT  |
ROW PCT  |
COL PCT  |    8.5|    9.5|   10.5|   11.5|   14.5|   15.5|  TOTAL
---------+-------+-------+-------+-------+-------+-------+
FEMALE   |      1|      0|      1|      1|      1|      2|     24
         |   2.13|   0.00|   2.13|   2.13|   2.13|   4.26|  51.06
         |   4.17|   0.00|   4.17|   4.17|   4.17|   8.33|
         |  33.33|   0.00| 100.00|  50.00| 100.00| 100.00|
---------+-------+-------+-------+-------+-------+-------+
MALE     |      2|      2|      0|      1|      0|      0|     23
         |   4.26|   4.26|   0.00|   2.13|   0.00|   0.00|  48.94
         |   8.70|   8.70|   0.00|   4.35|   0.00|   0.00|
         |  66.67| 100.00|   0.00|  50.00|   0.00|   0.00|
---------+-------+-------+-------+-------+-------+-------+
TOTAL           3       2       1       2       1       2      47
             6.38    4.26    2.13    4.26    2.13    4.26  100.00
```
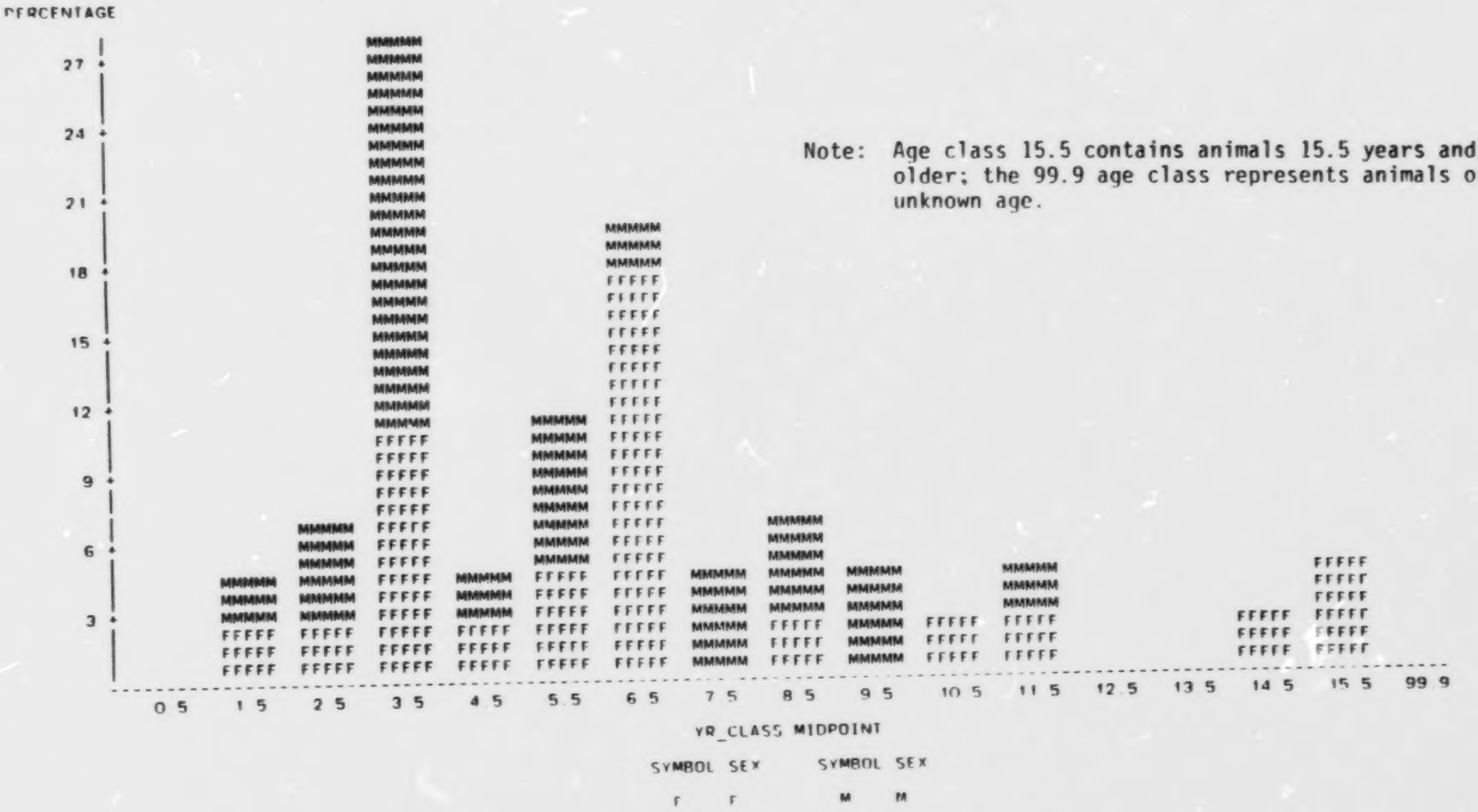

Note: Age class 15.5 contains animals 15.5 years and older

Figure 9. Sex and age composition of the 1985 bear harvest from northeastern Saskatchewan as calculated from tooth samples.



Note: Age class 15.5 contains animals 15.5 years and older; the 99.9 age class represents animals of unknown age.

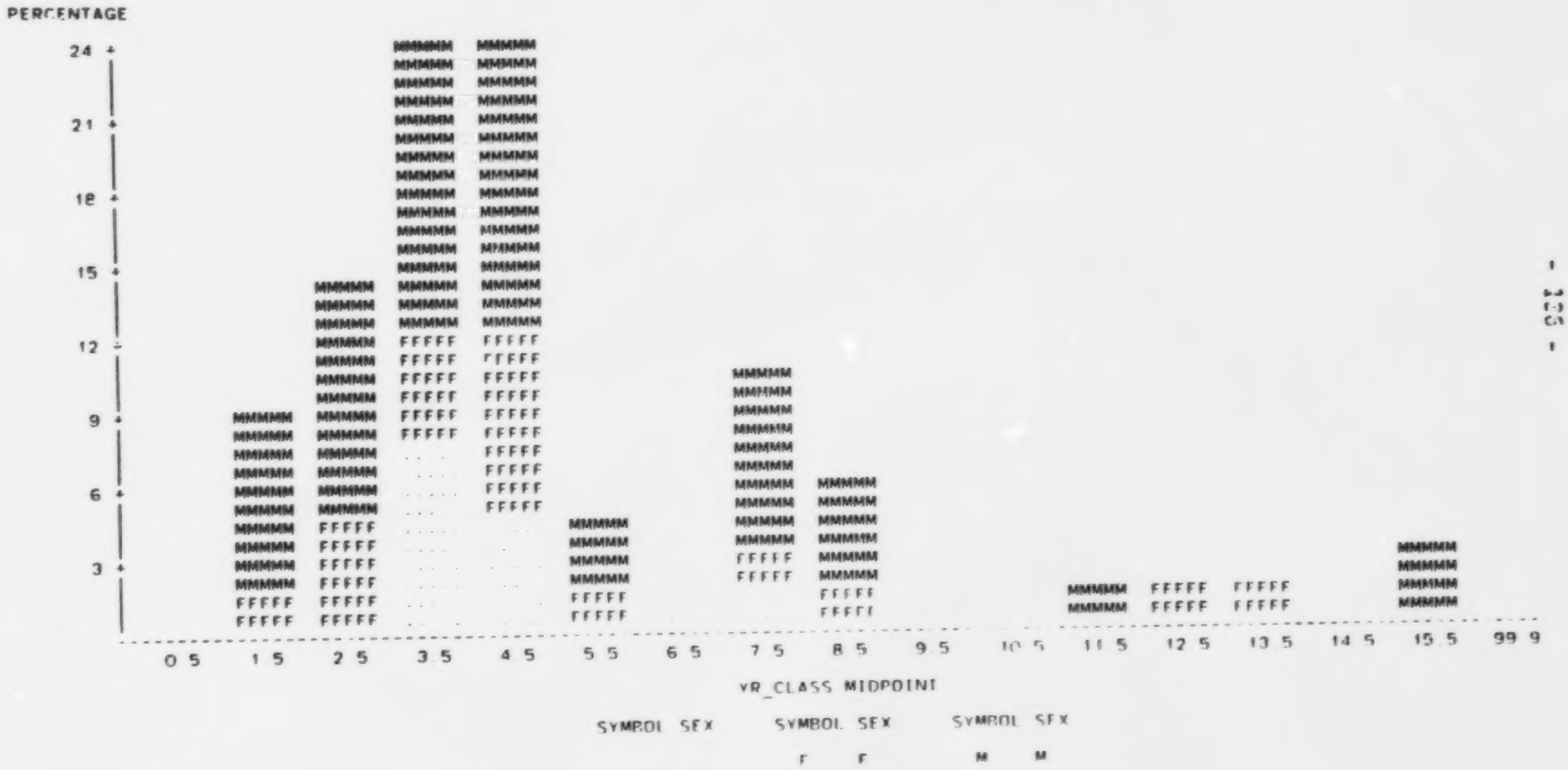
Table 65. Sex and composition of the 1986 bear harvest from northwestern Saskatchewan as calculated from tooth samples.

```
SEX        YR_CLASS

FREQUENCY|
PERCENT  |
ROW PCT  |
COL PCT  |    1.5|    2.5|    3.5|    4.5|    5.5|    6.5|    7.5|    8.5|   11.5|   12.5|   13.5|   15.5|  TOTAL
---------+-------+-------+-------+-------+-------+-------+-------+-------+-------+-------+-------+-------+
FEMALE   |      1|      3|      3|      5|      1|      0|      1|      1|      0|      1|      1|      0|     17
         |   1.67|   5.00|   5.00|   8.33|   1.67|   0.00|   1.67|   1.67|   0.00|   1.67|   1.67|   0.00|  28.33
         |   5.88|  17.65|  17.65|  29.41|   5.88|   0.00|   5.88|   5.88|   0.00|   5.88|   5.88|   0.00|
         |  16.67|  30.00|  25.00|  35.71|  33.33|       |  16.67|  25.00|   0.00| 100.00| 100.00|   0.00|
---------+-------+-------+-------+-------+-------+-------+-------+-------+-------+-------+-------+-------+
MALE     |      5|      7|      9|      9|      2|      0|      5|      3|      1|      0|      0|      2|     43
         |   8.33|  11.67|  15.00|  15.00|   3.33|   0.00|   8.33|   5.00|   1.67|   0.00|   0.00|   3.33|  71.67
         |  11.63|  16.28|  20.93|  20.93|   4.65|   0.00|  11.63|   6.98|   2.33|   0.00|   0.00|   4.65|
         |  83.33|  70.00|  75.00|  64.29|  66.67|       |  83.33|  75.00| 100.00|   0.00|   0.00| 100.00|
---------+-------+-------+-------+-------+-------+-------+-------+-------+-------+-------+-------+-------+
TOTAL           6      10      12      14       3       0       6       4       1       1       1       2      60
            10.00   16.67   20.00   23.33    5.00    0.00   10.00    6.67    1.67    1.67    1.67    3.33  100.00

FREQUENCY MISSING = 10
```

Note: Age class 15.5 contains animals 15.5 years and older

Figure 10. Sex and age composition of the 1986 bear harvest from northwestern Saskatchewan as calculated from tooth samples.

Note: Dots represent unknown sex animals; the 15.5 age class includes animals 15.5 years and older.



- Hunter success from 1984 to 1987 varied from 9% to 27%, generally well below success rates for the 1st and 2nd licences (Table 66). Approximately 5,600 hunters harvested an estimated 1,015 bears over the four year period with an overall success rate of 18%. The harvest structure was 1.92 boars/sow/0.50 young in 1987, 1.90 boars/sow/1.40 young in 1986, and 2.00 boars/sow/0.00 young in 1985, indicating a slightly higher harvest of females and young bears than occurs in the regular season harvest. Total hunter days attributed to the free bear licence program is estimated to have exceeded 20,000 days.
- It is believed that after 4 years of offering additional bear hunting opportunity in WMZ 58 to 61, a core group of bear hunters has become established and they will continue to harvest bears at a relatively high rate.

3. Hunting Pressure

- Licence sale figures indicate bear hunting in Saskatchewan has increased in popularity in recent years. While total sales have remained relatively constant during the 1984 to 1987 period, there has been a 150% increase in licences sales from the mid-1970's to present, and hunter-days have doubled since 1980. In recent years, guides and outfitters have recognized that a sizeable market is available by providing services to bear hunters. The non-resident component in total licence sales has grown significantly during the 1985 to 1987 period. Non-resident hunters comprised 9%, 13% and 19% of total licence sales annually from 1984 to 1987, respectively. It is possible that resident interest in bear hunting has stabilised, but non-resident interest is increasing rapidly.

D. 1988 MANAGEMENT OBJECTIVES

1. No Protection in Agricultural Saskatchewan

- In agricultural Saskatchewan, WMZ 1-36, 38-41 and 44-47 may continue to be hunted for bear at any time of year without a licence, in order to reduce depredation problems in bee yards and bear-human interactions.

Table 66. Estimated Free bear licence harvest and hunter activity, 1984 to 1987

	Harvest				Percent Hunter Success			
WMZ	1984	1985	1986	1987	1984	1985	1986	1987
58	28	49	98	16	7	15	28	6
59	81	49	216	224	13	6	29	29
60	28	0	59	65	8	0	21	20
61	0	49	49	8	0	15	24	4
Total	137	147	423	333	9	9	27	20

	Hunter Days				Hunter Days/Animal			
WMZ	1984	1985	1986	1987	1984	1985	1986	1987
58	----	871	1,087	1,077	----	18	11	67
59	----	2,958	2,479	3,303	----	60	11	14
60	----	491	979	1,114	----	0	17	17
61	----	1,381	752	683	----	28	15	85
Total	----	5,707	5,297	6,178	----	38	13	18

2. Elimination of Free Bear Permits - WMZ 58 to 61
   - The purpose of this 4 year program was to heighten hunter awareness for bear hunting in northeast Saskatchewan where an increased bear harvest would assist moose calf survival. This public awareness objective has been achieved and the program can be discontinued for 1988.
3. Increase Biological Data
   - With the significance of the black bear as a big game species in Saskatchewan, collections of bear sex and age harvest data will be intensified to permit a higher degree of precision in estimating the current population structure. Since population census techniques for bears are unreliable, managers must use age and sex information from the harvest to reflect population structure changes, that will assist in long-term management of the species.

E. 1988 BEAR SEASONS

April 11 — June 11
Wildlife Management Zones 37, 42, 43 and 48 to 69 including Fort a la Corne Wildlife Management Unit, Nipawin Provincial Park and the Bronson Recreation Site (Licence required)

April 25 — June 25
Wildlife Management Zones 70 to 76 (Licence required)

April 11 — May 28
Duck Mountain, Greenwater Lake and Meadow Lake Provincial Parks (Licence required)

April 25 — May 28
Lac La Ronge and Clearwater River Provincial Parks (Licence required)

Bag Limit

One bear, either sex, with each of first and second licences.

In Wildlife Management Zones 1 to 36, 38 to 41 and 44 to 47, bears may be hunted at any time of year without licence, subject to the Wildlife Regulations.

Bear (Sask. Residents, Canadian Residents and Non-residents)	Zones 37, 42, 43 and 48 to 76, including Cookson, Horseshoe Lake and Leaf Lake Wildlife Management Units	Aug. 29 - Oct. 15	two bear, either sex; separate licences required	- Unused spring bear licences are valid in the fall season.
	Clearwater River, Lac La Ronge, Meadow Lake, Nipawin and Duck Mountain Provincial Parks; and Bronson Forest Recreation Site	Sept. 7 - Oct. 15	two bear, either sex; separate licences required	
	Fort a la Corne Wildlife Management Unit only	Sept. 19 - Oct. 13	two bear, either sex; separate licences required	

WOODLAND CARIBOU

A. REVIEW OF PAST HUNTING SEASONS

- The woodland caribou season was closed province-wide in 1987, in response to low populations and in some zones, local herds had been eliminated completely. Improved forest road access and forest harvesting practices, which not only removed habitat but also allowed sport and Indian hunters easier access to the caribou, are believed responsible for the decline of woodland caribou populations.
- Historically, hunting seasons on woodland caribou were closed from 1946 1961 due to estimated low populations. As populations improved, seasons were opened in 3 WMZ in 1962 and by 1967 all northern forest zones in the province were open for caribou hunting.
- This situation was again reversed in 1986, when only WMZ 70 to 75, including Lac La Ronge Provincial Park, were opened to woodland caribou hunting. All other zones were closed for the 1987 season because of concern that populations were declining rapidly.
- In terms of sport hunting, between 136 and 152 licences were sold annually between 1983 and 1986 (Table 67). Resident hunters comprise 89% of the total licence sales. The 1986 harvest was 28 animals (20% success) compared to 23 to 35 caribou harvested by sport hunters in past years, and provided 450 days of hunting recreation.

B. POPULATION STATUS

- Woodland caribou populations are considered to be low and below normal densities throughout most of the province. The concern over low caribou densities has prompted the Department to initiate a long-term study designed to estimate populations for specific WMZ and eventually, for the entire caribou range in the province.
- During the 1985-86 winter, aerial surveys were designed and flown in an attempt to estimate caribou densities in several parts of the range. Data collected from the 2420 km^2 Weyakwin study area suggested that caribou densities were 0.02 caribou/km^2 (1 caribou/45 km^2). These densities were significantly lower than the 0.14 caribou/km^2 reported from the Dore Lake area in 1960 (Table 68).

Table 67. Estimated hunter success and harvest pressure during the woodland caribou season, 1983 to 1987.

Licence Sales	1983	1984	1985	1986*	1987****
Saskatchewan Residents	152	182	134	115	0
Canadian Residents	***	***	4	5	0
Non-residents	***	***	14	8	0
Total Sales	152	182	152	128	0
Harvest	27	23	24	45**	0
% Success	13%	15%	19%	38%**	0
Hunter Days	232	512	420	516**	0

* Only WMZ 70 to 75, including Lac La Ronge Provincial Park, opened to hunting.

** Estimates based on a separate questionnaire survey sent to all 128 licence holders in June 1987. The response rate was 58%; 68 active hunters (92% of the respondents reported hunting activity) reported a harvest of 26 caribou and spent 298 recreation days (4.4 days/active hunter in the field). The harvest and hunt activity information was then extrapolated to arrive at the 1986 provincial estimates.

*** Canadian and non-resident licence sales are included in the Saskatchewan resident figures.

**** No caribou season in any WMZ in 1987.

Table 68. Woodland caribou population estimates based on early winter stratified aerial surveys, 1960 to 1988*.

Area	WMZ	Survey Area km²	Survey Date	#gps	Observed Caribou Animals	Range	Mean	Activity Areas	Projected Population	Density km²/Caribou	Density Caribou/km²
Attiti Lake	71	815 km²	Jan 7-10/87	4	27	4-13	6.8	6	55+	14.8 km²	0.06/km²
Hanson Lake	70	1150 lm²	Jan 7-10/87	8	45	3-13	5.6	9	53-55	20.9 km²	0.05/km²
Wevakwin Lake	66	2420 km²	Dec 3-5,11-12/87	14	60	1-8	4.3	6	60+	40.3 km²	0.02/km²
Sled Lake	66	732 km²	Jan 23/87	2	11	4-7	5.5	5	20-30	24.2 km²	0.04/km²
Dore Lake**	66	676 km²	1960	--	--	--	--	--	--	7.0 km²	0.14/km²
Key Lake	75	2380 km²	Jan 8-11/88	17	63	1-7	3.7	24	96	24.8 km²	0.04/km²

* Survey design based on transects flown by a fixed-wing aircraft, followed by tracking and direct observation of animals and activity areas using a Bell 206 helicopter with 2 observers, nevigator and pilot.

** B. Ruttan's estimate in the Sled Lake and Dore Lake area, 1960.

- In 1986-87, aerial surveys were flown on the Weyakwin, Hanson, Attitti Lake and Sled Lake survey blocks during the December-January time period when herd groups are larger and many mature bulls remain associated with the main herds. Observed densities of caribou and caribou activity areas increased on the Weyakwin survey block, but densities for all survey areas remained between 0.02 to 0.06 caribou/km^2.
- Sex and age data from these survey efforts were inconclusive due to the low sample sizes and difficulty in distinguishing yearling bulls from cows by antler development (Table 69).
- In 1987-88, a new survey block was established north of the Churchill River near the Key Lake Uranium mine site. This area had been inventoried using a transect survey design in the late 1970's, as a part of the environmental work carried out prior to construction of the Key Lake mine. Due to the survey design, accurate caribou densities could not be obtained, but the general impression was that densities were lower than for prime caribou range south of the Churchill River.
- The 1987-88 Key Lake survey, using the revised survey design incorporated in the other caribou survey blocks, provided an estimate of 96 caribou on 2,380 km^2, for a projected density of 0.04 caribou/km^2 or 1 caribou/24.8 km^2 (Table 68). These densities are higher than densities estimated on the Weyakwin (WMZ 66) survey block and slightly lower than densities for the Attiti Lake (WMZ 71) and Hanson Lake (WMZ 70) areas. Although densities north of the Churchill River were traditionally thought to be lower than for southern zones, the data suggest that this is not the case at this point in time. In view of the extensive amount of homogenous habitat (lakes and water drainages, interspersed with jackpine stands and treed muskeg) in WMZ 74 to 76, caribou populations in these zones may be higher than previously estimated. A population figure cannot be derived until these zones are habitat-typed, but the densities obtained from the Key Lake survey block are encouraging.
- Sex and age information obtained from the Key Lake survey block suggest normal calf production (32 calves/100 cows) and bull/cow (53 bulls/100 cows) ratios for woodland caribou and are consistent with ratios obtained from the other southern survey blocks (Table 69).

Table 69. Sex and age composition of the woodland caribou population based on post-season helicopter observations, 1987 & 1988.

Survey Block	1986-87 Bull/Cow/Calf (n)	1987-88 Bull/Cow/Calf (n)
Attiti Lake	60/100/10 (17)*	-----
Hanson Lake	33/100/33 (45)*	-----
Weyakwin	39/100/27 (55)*	-----
Sled	sample too small	-----
Key Lake	-----	53/100/32(96)**

* female sample probably includes yearling males

** females/males sexed according to the present or absence of a dark vulva patch

C. 1988 MANAGEMENT OBJECTIVE

- In view of the uncertain status of woodland caribou populations in most WMZ, a province-wide hunting season closure will be maintained for 1988.
- The Department will continue investigating the status of caribou during the 1988-89 winter, in order to determine factors contributing to their low numbers, estimate densities in other zones and project a provincial caribou population based on reliable data. Upon completion of this study, the future of woodland caribou hunting in the province will be reviewed.

D. 1988 WOODLAND CARIBOU SEASON

- There will be no woodland caribou season in Saskatchewan for 1988.

BARREN-GROUND CARIBOU

A. REVIEW OF 1987 HUNTING SEASONS

- Only residents of WMZ 76 are allowed to hunt barren-ground caribou. Residents of Zone 76 are permitted a 2 caribou bag limit with the purchase of two licences, and an extended hunting season running from mid-November to April. In previous years the season was one month shorter but the presence of wintering caribou in WMZ 76 for longer periods of time resulted in an extended season.
- In 1987, 61 licences were sold and 18 caribou harvested resulting in a success rate of 79% and 25 days of hunting recreation (Table 70). Harvest locations were equally divided between three areas and accessed by snow machine. The three areas were located about 26 miles north of Uranium City, 10 to 15 miles north of Stony Rapids and 60 miles north of Wollaston Lake.

B. POPULATION STATUS

- Residents of Zone 76 have access to both the Beverly and Kaminuriak herds of barren-ground caribou. Although parts of both herds may migrate into and winter in northern Saskatchewan, the Beverly herd is the usual occupant. The Kaminuriak herd may, in some winters, enter the province from the east side and be hunted by residents of the Wollaston Lake area.
- Harvest on these herds (including unregulated harvest) was extremely high in 1980 when large numbers of both herds over-wintered entirely within Saskatchewan and Manitoba.
- However, regulated hunter pressure on these herds has been insignificant over the past several years. In 1987 the harvest was taken exclusively from the Beverly herd and is well below the 10 year average harvest.
- The most recent population data on both herds comes from aerial surveys conducted in 1984 and 1988 on the Beverly herd, and in 1985, 1987 and 1988 on the Kaminuriak herd. In 1984, the Beverly herd was estimated at 335,000 caribou, a stable to slightly increasing population with excellent recruitment. Preliminary results of the recently completed 1988 survey suggest a declining population with moderate to good recruitment. In 1985 the Kaminuriak herd was estimated at 320,000 caribou, a rapidly increasing population with excellent recruitment. A

Table 70. Provincial barren-ground caribou harvest, 1987.

Hunter Residence	Uranium City	Stony Rapids	Wollaston Lake	Totals
Licences Available	30	40	40	110
Licences Sold - First	16	12	8	61
- Second	10	7	8	
Hunter Success - First	10	8	8	48 (79%)
- Second	9	5	8	
Kill Locations	Alces Lake Ena Lake Collin Lake	Clut Lake Reeves Lake Axes Lake Chipman Lake Lytle Lake	Phelps Lake Franklen Lake Bickerton Lake	

post-calving survey conducted in July 1987 provided a very similar estimate and preliminary results of the June 1988 survey suggest a stable population with moderate to good recruitment.

- While the Beverly herd has remained north of Lake Athabasca since 1980, the Kaminuriak herd has dramatically changed its winter range to include areas of Manitoba not visited for over 20 years.

C. MANAGEMENT OBJECTIVES FOR 1988

- For the past six years, management of both herds has been coordinated by the Caribou Management Board which encompasses Saskatchewan, Manitoba and the Northwest Territories. A recently published management plan details several strategies, some of which directly involve Saskatchewan hunters.
- A harvest study was completed for the ninth consecutive year providing an accurate estimate of the overall harvest of caribou by Saskatchewan residents. The study will continue during the 1988-89 winter season.
- Winter distribution surveys have provided a continuous record of caribou winter movements and distribution in northern Saskatchewan. In 1987-88 the surveys were only partially flown due to budget constraints, but additional surveys are proposed for the 1988-89 winter. In the absence of aerial surveys, interviews with people on the caribou range have and will continue to provide a rough approximation of caribou winter distribution.
- Saskatchewan also participates in and provides financial support for Caribou Management Board meetings, community meetings, the caribou school program and the Caribou News newsletter.
- A proposal to allow all Saskatchewan residents the opportunity to hunt barren-ground caribou has been developed with plans to gain the support of the Caribou Management Board and Zone 76 residents through community consultation in 1989.

D. 1988 BARREN-GROUND CARIBOU HUNTING SEASON

- Season dates and bag limits will be similar to 1987. Only residents of WMZ 76 may hunt barren-ground caribou. Each hunter may purchase 2 licences and is restricted to a bag limit of 2 caribou of either sex during a season from November 21, 1988 to March 31, 1989.

GAME BIRDS

GENERAL

HUNTING REGULATIONS

The 1987 and 1988 game bird hunting seasons and bag limits are outlined in Appendices 6 and 7, respectively. Season dates and bag limits from the recent past are presented in Appendix 8(a-f). Appendix 9 illustrates the 37 former game management zones, established in 1975 and used until 1983. Appendix 10 illustrates the 76 wildlife management zones used since 1984.

DATA COLLECTION TECHNIQUES

Licence Sales

Licence sales are tabulated by the Revenue Section, Management Services Branch of Saskatchewan Parks, Recreation and Culture (former Saskatchewan Parks and Renewable Resources), using licence returns from vendors and Department offices.

1987 Saskatchewan Game Bird Hunter Survey

Twenty thousand (20,000) of the 41,317 resident game bird hunters from 1986 were randomly selected to receive the 1987 Hunter Survey, using 1986 licence stubs. These resident hunters were mailed a survey form (Appendix 11) on September 14, 1987. Hunters returned 1,323 (6.6%) of the surveys by November 30. On December 4, a follow up letter (Appendix 12) and another copy of the questionnaire were mailed to all non-respondents (93% of original mailing). The total response by the March 7, 1988 cut off date for receipt of resident returns was 31.1%. The return rate for the 1986 survey was 41%, the 1985 survey was 36%, for 1984, 38%, for 1983, 39%, for 1982, 43% and for 1981, 48%.

In addition, 1,500 Canadian resident bird hunters and 1,500 non-resident hunters (primarily U.S.A.) were sampled using the 1987 habitat certificates. Non-resident questionnaires were mailed on December 4, 1987 and no second mailing was conducted. Total usable responses and expansion factors used in computer analysis were as follows:

	Total Usable Responses			Expansion Factors		
	1987	1986	1985	1987	1986	1985
Saskatchewan Residents	5,316	5,800	4,733	6.22	7.01	7.88
Canadian Residents	246	503	439	7.60	4.10	4.79
Non-residents	596	495	523	6.19	7.29	6.43

The returned questionnaires were edited by the Statistics and Evaluation Section of Management Services and keypunched by Management Services Branch. Don Fowler, a Saskatoon consultant, conducted the computer analysis of the data. Computer printouts were available April 18, 1988 and were used extensively to write this report.

Wing Collection

A total of 3,342 wings was collected from hunter-bagged upland game birds in the fall of 1987 to derive population age-structures, from which reproductive success can be inferred. The 1987 sample increased by 20% from the 2,769 wings collected in 1986. Conservation Officers collected wings from hunters encountered in the field and enlisted the assistance of wildlife organizations to obtain samples. For the eighth consecutive year, individual and group awards (Champion Chicken Plucker) for the largest species collection provided additional incentive to the officers. Wildlife Branch staff collected wings on an incidental basis.

Experienced Wildlife Branch staff (M. Hlady, P. Haughian and F. Beek) aged the wings according to primary feather eruption and wear.

Population Surveys

Upland game bird populations were surveyed between April 4 and May 15, 1988 by Wildlife Branch staff and Conservation Officers. The data were compiled and analyzed by the Wildlife Branch.

1987 LICENCE SALES

A total of 35,190 Saskatchewan game bird hunting licences was sold to provincial residents in 1987, down 15% from 1986 and 31% below the 1977-86 average of 50,733 (Table 71). The perception of poor duck hunting opportunity and the increase in licence fees (wildlife habitat certificate) are believed to have been mainly responsible for the depressed sales. Licence sales to other Canadians (2,029) were down by 6% and non-residents of Canada (3,895) up by 4%, producing a total of 41,114 licences sold. From 1983 to 1987 Saskatchewan residents did not require a separate licence to hunt cock pheasants.

MIGRATORY BIRDS

INTRODUCTION

The Canadian Wildlife Service (CWS) is primarily responsible for management of migratory birds, although in Saskatchewan they are managed in consultation with the provincial authority. CWS collects most of the prerequisite data. Their migratory game bird hunter survey is complemented by the Saskatchewan Game Bird Hunter Survey (Appendix 11), the 1987 results of which are reported herein.

From 1979 to 1984, stabilized duck regulations were in effect. With a daily bag limit of eight birds those regulations were considered liberal. The 6-year framework of stabilized duck regulations ended in 1985 when bag limits were reduced to four birds per day. Bag limits were relaxed in 1986, providing for six ducks per day of which only four could be mallards. Additionally, the duck season in southern Saskatchewan was delayed to September 15. These measures were taken to effect a 25% reduction in mallard harvest from that expected under stabilized regulations; this reduction has been achieved each year. The 1987 Saskatchewan mallard harvest displayed a decrease of 19.1% from 1986.

Goose hunting regulations have remained stable except for calendar adjustments.

1987 HUNTING ACTIVITY

The number of Migratory Game Bird permits sold in the province has declined in recent years. There were 29,930 federal Migratory Game Bird permits sold in 1987 compared to 37,692 in 1986, a decrease of 21% (Table 71).

Waterfowl (duck and goose) hunter days decreased by 21% from 1986 with an estimated 23,930 active hunters, 48% below the 14-year average. The 1987 waterfowl hunters spent 4.0 days in the field, slightly above 1986 (3.4 days), and well above the 14-year average (2.9 days) (Table 72).

Table 71. Saskatchewan Game Bird Licence Sales and Migratory Game Bird Permit Sales 1966-1987

Year	Game Bird Licence Sales (%) Saskatchewan Resident (%)	Canadian Resident (%)	Non-Resident (%)	Total	Saskatchewan Migratory Game Bird Permit Sales
1987*	35,190 (85.59)	2,029 (4.94)	3,895 (9.47)	41,114	29,930
1986	41,317 (87.53)	2,158 (4.57)	3,731 (7.90)	47,206	37,692
1985	38,243 (87.07)	2,181 (4.97)	3,497 (7.96)	43,921	36,445
1984	40,102 (88.13)	2,125 (4.67)	3,277 (7.20)	45,504	37,720
1983	47,157 (87.53)	2,978 (5.53)	3,741 (6.94)	53,876	45,383
1982	50,179 (86.62)	3,719 (6.42)	4,034 (6.96)	57,932	47,236
1981	49,034 (86.56)	3,813 (6.73)	3,801 (6.71)	56,648	42,856
1980	59,151 (88.45)	3,929 (5.88)	3,793 (5.67)	66,873	54,081
1979	59,044 (87.63)	3,907 (5.80)	4,429 (6.57)	67,380	56,174
1978	60,901 (87.79)	3,827 (5.52)	4,645 (6.70)	69,373	57,958
1977	62,205 (88.00)	3,901 (5.52)	4,583 (6.48)	70,689	60,029
1976	62,288 (86.43)	4,746 (6.59)	5,030 (6.98)	72,064	61,669
1975	57,275 (87.26)	4,312 (6.57)	4,048 (6.17)	65,635	57,723
1974	52,591 (87.36)	3,821 (6.35)	3,790 (6.30)	60,202	51,504
1973	50,586 (88.60)	2,898 (5.08)	3,609 (6.32)	57,093	51,307
1972	47,217 (81.46)	5,605 (9.67)	5,140 (8.87)	57,962	50,004
1971	45,398 (81.11)	5,076 (9.07)	5,496 (9.82)	55,970	49,448
1970	48,685 (84.32)	4,866 (8.43)	4,190 (7.26)	57,741	47,722
1969	46,709 (85.98)	3,410 (6.28)	4,204 (7.74)	54,323	45,347
1968	52,430 (93.27)	Not required	3,784 (6.73)	56,214	43,596
1967	52,598 (93.62)	Not required	3,583 (6.38)	56,181	44,651
1966	50,687 (93.90)	Not required	3,294 (6.10)	53,981	44,744
1977-86 Average	50,733	3,254	3,953	57,940	47,557

*Sales figures to May 30, 1988 (and considered final for 1987).

Table 72. Saskatchewan Waterfowl Hunting Activity, 1973-1987*

Year	Active Waterfowl Hunters	Waterfowl Hunter Days	Hunter Days/ Active Hunter
1973	43,200	116,700	2.7
1974	47,700	150,000	3.1
1975	56,100	175,500	3.1
1976	58,500	188,600	3.2
1977	57,100	163,300	2.9
1978	52,300	135,400	2.6
1979	51,300	138,300	2.7
1980	48,600	128,200	2.6
1981	38,300	98,100	2.6
1982	42,400	108,200	2.5
1983	42,900	122,900	2.9
1984	32,000	94,100	2.9
1985	32,970	105,100	3.2
1986	34,821	119,627	3.4
1973-1986 Average	45,585	131,716	2.9
1987	23,930	95,045	4.0
% Change			
1987 from 1986	-31%	-21%	+18%
1987 from Average	-48%	-28%	+38%

*Note: Waterfowl hunting activity includes both duck and goose hunting.

DUCKS

1987 Hunting Activity and Harvest

Estimated retrieved kill of ducks in Saskatchewan during 1987 was 135,977 birds, a 24.9% decrease from the 181,077 taken in 1986, and well below the 1979-84 average (Table 73; Figure 9). Mallard harvest decreased by 19.1% from 125,212 in 1986 to 101,245 in 1987 (Table 74). The majority of the mallard harvest occurred from September 28 to October 26 (Figure 10).

Duck harvest per active Saskatchewan resident, non-resident Canadian and non-resident alien averaged 6.5, 8.6 and 12.8 birds, respectively. For the fifth consecutive year there have been more active goose hunters (20,966) than duck hunters (17,499) (Table 75).

In an effort to determine mallard hen harvest, the 1986-87 Saskatchewan Game Bird Hunter Questionnaire requested respondents to list drakes and hens separately. Using these data a sex ratio of 2.8 and 2.6 (males per females) was determined for years 1986 and 1987, respectively (Table 76). The CWS estimate, determined from wing collections during the hunting season, was 2.3, the greatest it has been for the past 9 years. This suggests that Saskatchewan hunters may not be able to accurately differentiate between male and female mallards, or tend to bias their reporting towards males. Nieman and Smith (1985) reported that only 62.1% of Saskatchewan hunters could correctly identify the sex of mallard ducks (Table 77). This underscores the need for Saskatchewan hunters to improve their duck identification skills.

1988 Duck Populations and Regulations

Most of the Grassland and Aspen Parkland regions of Alberta, Saskatchewan and Manitoba received below normal precipitation during the summer of 1987. Below normal snowfall was also recorded for all the Grassland and Aspen Parkland and most of the Boreal Forest regions in the three prairie provinces, for the second year. Only the central Boreal Forest region of Saskatchewan experienced normal snowfall. Southern Saskatchewan and southern Alberta and parts of the Aspen Parkland experienced well below normal runoff this spring. With the exception of 1982, spring runoff in southern Saskatchewan has been below average every year since 1979.

Table 73. Estimated retrieved kill of ducks in Saskatchewan, 1979-87 by Zone (after CWS Progress Notes and interim data via L. Métras, CWS, Ottawa; Provincial estimates via SPRC).

Year	Federal Estimates				Provincial Estimates
	Zone 1	Zone 2	Zone 3	Total*	
1979	173,336	154,397	254,960	582,693	553,790
1980	144,446	129,774	169,331	443,551	397,608
1981	82,305	70,474	120,472	273,251	239,753
1982	95,401	84,602	144,144	324,147	291,539
1983	125,434	75,343	180,967	381,744	326,100
1984	80,266	72,159	105,243	257,668	183,000
1979-84 Average**	116,865	97,792	162,520	377,176	331,965
1985	79,411	49,232	82,275	210,918	152,978
1986	81,291	58,489	86,698	226,478	181,077
1987	64,830	59,237	77,452	201,519	135,977
1985-87 Average	75,177	55,653	82,142	212,972	156,677
% Change					
1987 from 1986				-11%	-25%
1987 from 1979-84 average				-47%	-59%
1987 from 1985-87 average				-5%	-13%

* Total includes Zones 1, 2 and 3

**Period of stabilized regulations

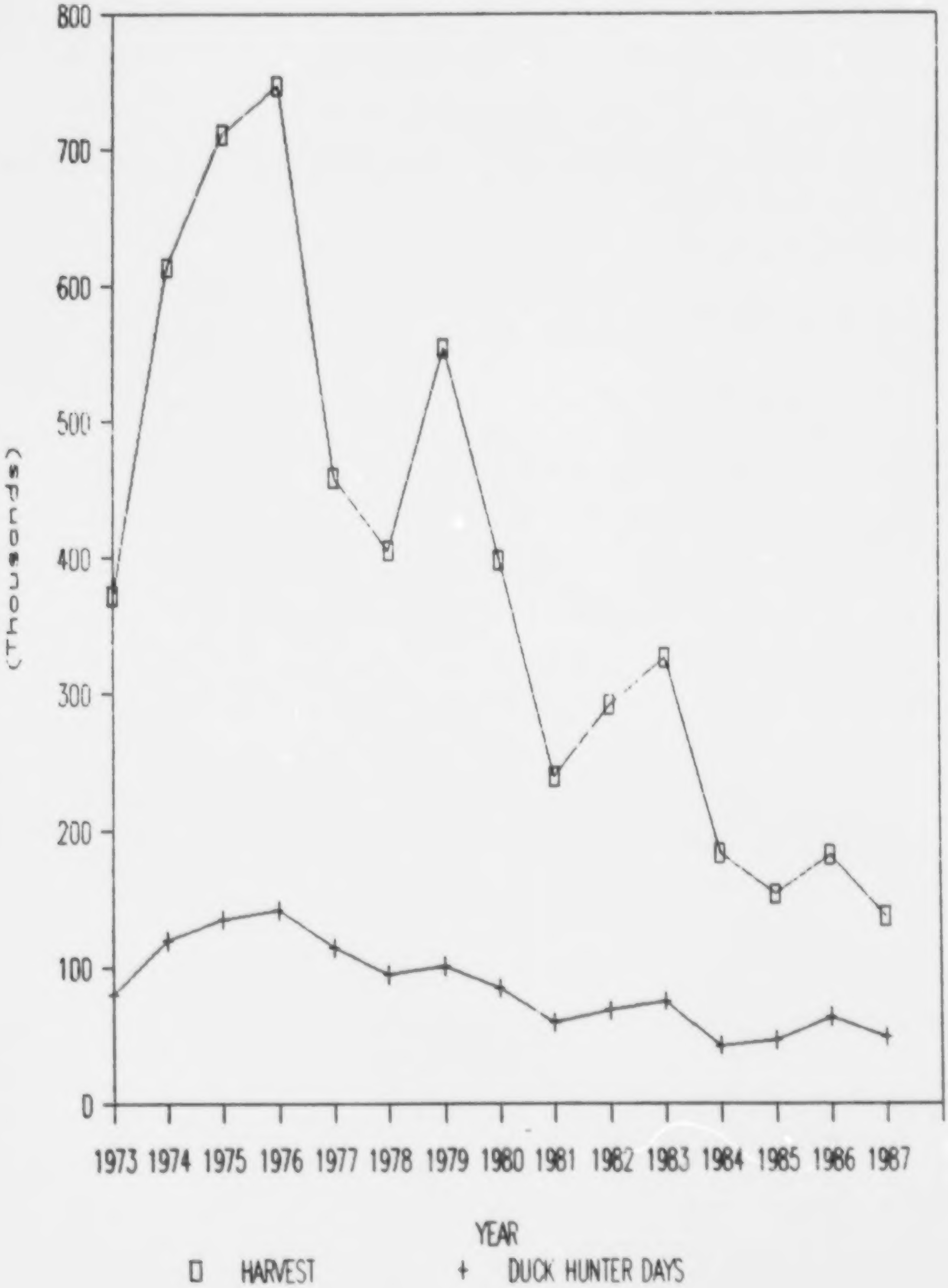


Figure 11. Saskatchewan duck hunter days and harvest, 1973-1987

Table 74. Estimated retrieved kill of mallards in Saskatchewan, 1979-1987 (after CWS Progress Notes and interim data via L. Métras, CWS, Ottawa and SPRC).

	Federal Estimates				
Year	Zone 1	Zone 2	Zone 3	Total*	Provincial Estimates
1979	117,330	119,394	185,940	422,664	432,351
1980	116,997	107,808	129,841	354,646	322,050
1981	68,721	55,082	106,391	230,194	195,953
1982	71,046	64,080	106,006	241,132	222,317
1983	99,291	48,263	138,238	285,792	244,541
1984	58,099	46,116	77,467	181,682	140,764
1979-84 Average**	88,581	73,457	123,981	286,018	259,663
1985	54,464	37,728	66,236	158,428	111,338
1986	51,222	40,652	59,233	151,107	125,212
1987	53,011	46,739	59,288	159,038	101,245
1985-87 Average	52,899	41,706	61,586	156,191	112,598
% Change					
1987 from 1986				+5%	-19%
1987 from 1979-84 Average				-44%	-61%
1987 from 1985-87 Average				+2%	-10%

* Total includes Zones 1, 2 and 3

**Period of stabilized regulations

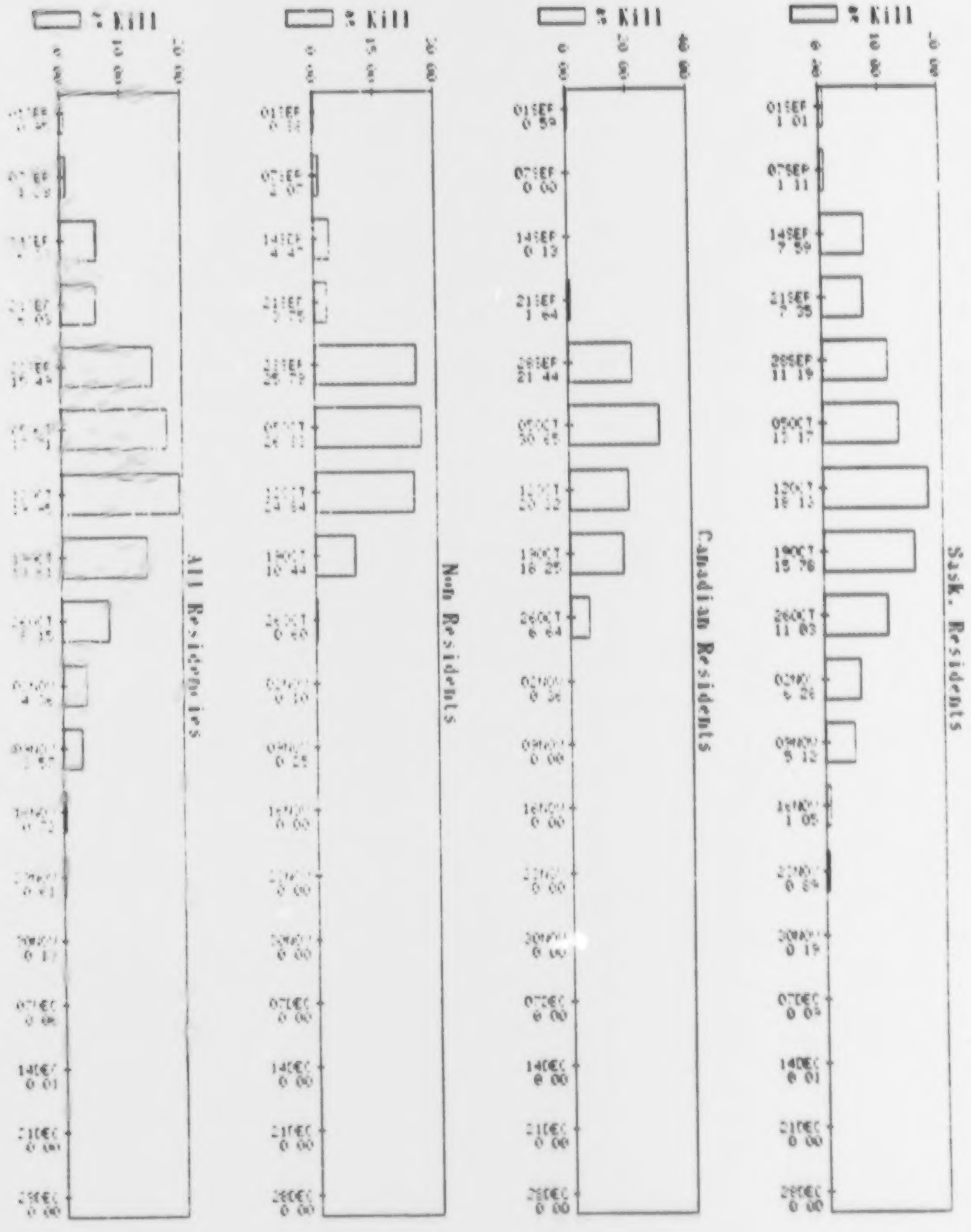


Figure 12. Saskatchewan 1987 mallard harvest by weekly intervals.

Table 75. Saskatchewan waterfowl harvest summary, 1987.

	Sask. Resident		Non-Resident, Cdn.		Non-Resident, Alien		All Hunters	
MALLARD DUCKS - Drakes	48,690	35.80%	4,697	3.45%	20,093	14.77%	73,480	54.03%
MALLARD DUCKS - Hens	20,831	15.31%	1,877	1.38%	5,057	3.71%	27,765	20.41%
MALLARD DUCKS	69,521	51.12%	6,574	4.83%	25,150	18.49%	101,245	74.45%
OTHER DUCKS	17,970	13.21%	2,204	1.62%	14,559	10.70%	34,732	25.54%
TOTAL DUCKS	87,491	64.34%	8,778	6.45%	39,709	29.20%	135,977	100.00%
Successful Hunters (% of Active)	11,613	(86.87%)	897	(88.05%)	2,940	(94.43%)	15,450	(88.29%)
Active Hunters	13,367		1,018		3,114		17,499	
Kill / Active Hunter	6.5		8.6		12.8		7.8	
Kill / Successful Hunter	7.5		9.8		13.5		8.8	
Days / Active Hunter	2.2		3.3		4.9		2.8	
Days / Successful Hunter	2.6		3.8		5.2		3.1	
Days Hunted	29,930.6		3,397.2		15,338.8		48,666.7	
CANADA GEESE	58,574	44.07%	6,696	5.03%	13,073	9.82%	78,343	58.88%
WHITE-FRONTED GEESE	18,741	14.08%	2,622	1.97%	6,370	4.78%	27,732	20.84%
SNOW GEESE	15,898	11.94%	1,847	1.38%	7,019	5.27%	24,765	18.61%
ROSS' GEESE	1,455	1.09%	312	0.23%	446	0.33%	2,213	1.66%
TOTAL GEESE	94,668	71.15%	11,476	8.62%	26,908	20.22%	133,052	100.00%
Successful Hunters (% of Active)	13,684	(83.71%)	1,390	(94.35%)	2,928	(93.29%)	18,010	(85.90%)
Active Hunters	16,346		1,482		3,138		20,966	
Kill / Active Hunter	5.8		7.7		8.6		6.3	
Kill / Successful Hunter	6.9		8.2		9.2		7.4	
Days / Active Hunter	1.9		2.8		3.5		2.2	
Days / Successful Hunter	2.3		3.0		3.7		2.6	
Days Hunted	31,270.6		4,172.4		10,974.9		46,417.9	
WATERFOWL (D+G)	182,159	67.70%	20,254	7.52%	66,617	24.76%	269,030	100.00%
Successful Hunters (% of Active)	16,950	(90.14%)	1,591	(94.20%)	3,392	(97.33%)	21,933	(91.61%)
Active Hunters	18,803		1,692		3,485		23,920	
Kill / Active Hunter	9.7		12.3		19.1		11.2	
Kill / Successful Hunter	10.7		12.8		19.6		12.3	
Days / Active Hunter	3.3		4.6		7.6		4.0	
Days / Successful Hunter	3.6		4.8		7.8		4.3	
Days Hunted	61,161.3		7,569.6		26,313.7		95,044.6	

Table 76. Sex ratios of mallards harvested in Saskatchewan.

Year	CWS Estimate [a] Males Per Female	Wings Received	SPRC Estimate [b] Males Per Female
1979	1.5	1,704	
1980	1.7	1,462	
1981	1.8	835	
1982	1.9	840	
1983	2.0	1,119	
1984	1.7	578	
1985	1.8	477	
1986	1.7	489	2.8
1987	2.3	672	2.6

a) determined from wing collections during the hunting season.

b) determined from hunter questionnaire. Data only available for 1986-87.

Table 77. Percent of Saskatchewan hunters able to correctly identify waterfowl as determined by bag checks, 1979-1983 (After Nieman and Smith 1985)

Species Name	% Hunters Able To Correctly Identify Species	Sex	n
Mallard	96.4	62.1	224
Gadwall	17.2	10.3	29
American Wigeon	25.0	0.0	12
Green-winged Teal	76.9	7.7	26
Blue-winged Teal	76.5	11.8	17
Northern Shoveler	76.5	0.0	17
Common Pintail	68.9	24.6	61
Redhead	75.0	50.0	16
Canvasback	54.2	50.0	24
Lesser Scaup	75.0	37.5	32
Common Goldeneye	100.0	100.0	6
Bufflehead	100.0	100.0	1
Ruddy Duck	50.0	0.0	6
Ducks	78.8	42.5	471
Canada Goose	99.3	0.0	281
White-fronted Goose	94.6	0.0	350
Snow Goose	83.7	0.0	135
Ross' Goose	70.3	0.0	101
Blue Goose	100.0	0.0	15
Geese	91.7	0.0	882
Total	87.2	14.8	1,353

Ponds in southern Saskatchewan and the Prairie Pothole Region (includes Prairie Canada, Montana and the Dakotas) as determined from the spring breeding population (air:ground) surveys, were reduced by 25% and 27% from 1987 and by 58% and 51% from the 1970-79 average, respectively (Table 78). The 1970-79 (10 year) average is used for comparison as it is the benchmark for the NAWMP and the Prairie Habitat Joint Venture. This more accurately reflects where we stand today in relation to our goals and objectives for the year 2000.

Recent studies in the Prairie Pothole region of the United States have indicated that mallard nest success is below 15%, the rate thought necessary for mallard populations in North Dakota to be self sustaining. Field work conducted during 1982-85 on 17 study areas in southern Alberta, Saskatchewan and Manitoba estimated mallard nest success at 12%, with a range on individual study areas from 2 to 29%. Of 31 annual mallard nest success estimates on individual study areas, only 7 equalled or exceeded 15%.

The number of mallards per km^2 in the Prairie-Parklands for the years 1961-88 are presented in Table 79. Following low populations during the drought years of the 1960's, mallard numbers generally increased and remained relatively high through the 1970's. Since 1979, during stabilized regulations, the average density of mallards declined in Prairie Canada, especially in southern Alberta and southern Saskatchewan.

The total duck population in southern Saskatchewan in 1988, as recorded during the CWS/USFWS Waterfowl Breeding Population Survey, was 4.1 million, down 27% from 1987, 58% below the 1970-79 average and 52% below the long term mean (Tables 78, 80 and 81). Total dabbling ducks decreased 26% from last year, and remained 56% below the long-term average. Mallards decreased by 31% from 1987 and remain 63% below the long-term average. Diving ducks decreased by 32% from 1987, and remain 24% below the long-term mean.

The 1988 duck brood index (74.3) for southern Saskatchewan decreased by 30% from 1987 (105.4), 22% below the 10-year average (Table 82). The late-nesting index (all duck species), which is intended to be a rough measure of broods yet to hatch after the survey, was up 29% (all duck species) from 1987 but was still 82% below the long term average. Late-nesting indices for mallard and pintail were down 82% and 81%, respectively from the long term average.

Intensive cultivation of wetland margins/basins and severe over-grazing and other agricultural use of associated uplands during the recent dry cycle have seriously impaired the ability of the prairies to support breeding waterfowl. Pintails, mallards and total ducks for southern Saskatchewan in 1988 are the lowest recorded since the May Breeding Population Survey was initiated in 1955. Total May ponds are the fourth lowest on record.

Total duck breeding populations in southern Saskatchewan have historically approached 20 million (11 million as recent as 1976). The 1988 estimate was 4.1 million. In short, the situation was dismal with very little duck production expected in 1988.

Even though restrictive regulations have been in effect since 1985, duck populations continue to decrease and the Saskatchewan resource, particularly the mallard, is in serious jeopardy. Past restrictive harvest strategies have not been sufficient to compensate for the current drought and severe degradation of upland nesting habitat.

Recognizing the current status of the waterfowl resource and its habitats, the poor prognosis for brood production in 1988, and the expectations of the hunting public, further restrictive bag limits will be implemented this fall. The duck bag limit for the 1988 hunting season will be 5 per day and 10 in possession of which not more than 3 may be mallards per day, 6 in possession. This represents a decrease of 1 mallard per day and 2 in possession from 1985-87 regulations. Although these reduced bag limits reflect the seriousness of the situation, duck hunters are also expected to show restraint and select for drakes whenever possible.

Table 78. Duck breeding pair and pond indices for Prairie Canada, Montana and the Dakotas (indices in thousands). After CWS/USFWS waterfowl breeding pair (air:ground) survey.

	Index			% Change from	
Location/Ducks/ May Ponds	1988	1987	1970-79* Average	1987	1970-79 Average
SOUTHERN ALBERTA					
Mallard	626.6	753.9	1,410.9	-17	-56
Pintail	167.6	447.3	1,349.6	-63	-88
Total ducks	2,832.6	3,198.1	5,854.3	-11	-45
Ponds	416.6	680.9	1,022.5	-39	-33
SOUTHERN MANITOBA					
Mallard	308.7	255.8	346.9	+21	-11
Pintail	46.5	56.3	170.4	-17	-73
Total ducks	1,250.5	1,376.9	1,746.3	-9	-28
Ponds	634.0	498.4	916.4	+27	-31
SOUTHERN SASKATCHEWAN					
Mallard	888.9	1,282.8	2,594.2	-31	-66
Pintail	144.7	340.6	1,790.7	-58	-92
Total ducks	4,052.2	5,560.2	9,647.3	-27	-58
Ponds	1,056.5	1,416.5	2,544.3	-25	-58
MONTANA					
Mallard	218.0	240.9	384.5	-10	-43
Pintail	52.9	146.0	263.1	-64	-80
Total ducks	717.4	839.7	1,309.5	-15	-45
Ponds	171.4	229.3	286.0	-25	-40
NORTH DAKOTA					
Mallard	350.6	582.6	589.3	-40	-41
Pintail	145.1	191.6	505.4	-24	-71
Total ducks	2,472.6	2,998.5	3,064.8	-18	-19
Ponds	311.2	612.0	669.5	-49	-54
SOUTH DAKOTA					
Mallard	369.3	556.8	421.0	-34	-12
Pintail	112.6	212.7	295.1	-47	-62
Total ducks	1,998.5	2,531.9	2,588.0	-22	-23
Ponds	304.4	527.6	418.5	-42	-27
TOTALS					
Mallard	2,762.1	3,672.8	5,746.8	-25	-52
Pintail	669.4	1,394.5	4,374.3	-52	-85
Total ducks	13,313.8	16,505.3	24,210.2	-19	-45
Ponds	2,894.1	3,964.7	5,857.2	-27	-51

*objective established under the NAWMP

Table 79. Mallard breeding population/km^2 in Prairie-Parkland Canada, 1961-88.

Year	Southern Alberta	Southern Saskatchewan	Southern Manitoba
1961	8.15	5.73	3.17
1962	5.90	3.94	2.01
1963	7.12	5.39	3.28
1964	6.72	4.79	4.10
1965	5.37	3.84	3.03
1966	9.29	6.83	3.23
1967	9.02	7.00	3.99
1968	5.48	7.37	1.86
1969	6.74	7.52	3.69
1970	9.57	10.21	4.43
1971	11.24	11.82	2.85
1972	10.96	9.28	4.04
1973	10.39	8.22	2.31
1974	9.46	7.23	3.21
1975	8.39	8.49	3.47
1976	8.73	10.51	5.34
1977	5.12	9.96	2.52
1978	5.06	6.64	2.86
1961-1978 Average	7.93	7.49	3.30
1979	5.90	7.77	3.56
1980	5.85	7.43	3.31
1981	5.69	5.23	3.51
1982	4.60	6.75	3.88
1983	5.08	5.96	3.36
1984	4.28	4.91	1.75
1985	4.82	4.28	2.25
1986	4.20	5.55	4.10
1987	4.15	4.46	2.56
1988	3.76	3.09	3.08
1979-1988 Average	4.83	5.54	3.14
% Change 1961-78 to 1979-88	-39.09	-26.03	-4.85

Table 80. Long-term trend in waterfowl breeding population estimates by species in Southern Saskatchewan, 1955-88 (estimates in thousands)[a]

Species	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Ducks										
Dabblers										
Mallard	1,232.9	1,613.2	1,286.8	888.9						
Am. black duck	.0	.0	2.8	.0						
Gadwall	588.4	559.9	539.2	314.0						
Am. wigeon	453.4	575.4	546.8	621.2						
Green-winged teal	237.4	274.9	351.9	397.6						
Blue-winged teal	1,327.3	876.5	674.9	531.5						
N. shoveler	670.9	713.0	643.8	361.6						
N. pintail	520.6	546.0	344.0	144.7						
Subtotal	5,030.9	5,158.9	4,390.2	3,259.5						
Divers										
Redhead	326.8	262.3	125.4	214.8						
Canvasback	118.8	127.2	184.2	150.4						
Scaups	328.2	448.9	612.8	273.5						
Ring-necked duck	26.7	15.9	33.9	35.3						
Goldeneyes	30.5	22.4	25.6	4.8						
Bufflehead	36.9	45.4	42.4	27.6						
Ruddy duck	163.7	162.5	138.7	80.0						
Subtotal	1,029.6	1,084.6	1,163.0	786.5						
Miscellaneous										
Oldsquaw	.0	.0	.0	.0						
Eiders	.0	.0	.0	.0						
Scoters	3.2	2.1	2.7	2.6						
Mergansers	1.2	.0	4.3	3.7						
Subtotal	4.4	2.1	7.0	6.3						
Total ducks	6,064.9	6,245.6	5,560.2	4,052.2						
Canada goose	32.7	42.9	42.9	42.2						
Am. coot	662.8	551.3	277.9	832.5						

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[a] Adjusted for visibility bias.

Table 80 cont. Long-term trend in waterfowl breeding population estimates by species in Southern Saskatchewan, 1955-88 (estimates in thousands)[a]

Species	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Ducks										
Dabblers										
Mallard	2,443.1	3,026.5	2,866.8	1,911.4	2,237.2	2,138.8	1,506.6	1,944.6	1,713.7	1,412.1
Am. black duck	1.1	.0	.0	.0	.7	.0	.0	.0	.0	.0
Gadwall	753.5	721.9	600.8	532.9	695.5	676.5	609.5	619.7	575.2	660.4
Am. wigeon	817.5	666.6	460.6	641.5	812.8	610.4	332.2	596.5	675.0	366.7
Green-winged teal	311.0	321.9	222.3	302.1	463.7	276.6	185.3	269.8	255.8	131.4
Blue-winged teal	2,622.7	1,799.6	1,631.2	902.4	1,482.8	1,307.2	1,110.1	818.2	963.2	876.9
N. shoveler	730.3	823.0	422.7	426.6	692.4	696.8	333.0	699.1	792.8	352.7
N. pintail	2,050.3	2,569.5	672.6	961.7	1,580.0	897.5	526.2	1,222.1	1,029.3	542.1
Subtotal	9,729.5	9,907.0	6,877.0	5,678.6	7,965.1	6,199.8	4,601.7	6,167.8	6,005.0	4,340.3
Divers										
Redhead	288.6	270.5	227.6	186.1	227.9	325.0	213.5	125.9	233.6	306.9
Canvasback	305.7	283.3	253.5	128.9	280.9	221.0	111.1	181.1	212.7	166.6
Scaups	622.0	495.0	702.2	526.1	796.5	629.0	277.1	498.2	864.8	549.2
Ring-necked duck	62.1	49.1	45.0	51.8	56.0	65.9	67.2	80.5	25.1	68.0
Goldeneyes	18.4	18.0	73.1	15.8	60.2	33.1	22.8	23.4	18.3	17.1
Bufflehead	62.0	33.5	52.5	50.1	61.8	36.8	40.0	33.5	52.2	38.5
Ruddy duck	114.8	97.3	122.7	48.1	136.5	77.1	76.6	301.2	149.9	88.5
Subtotal	1,473.6	1,246.7	1,476.6	1,032.9	1,595.8	1,381.9	788.1	1,261.8	1,536.4	1,214.8
Miscellaneous										
Oldsquaw	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Eiders	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Scoters	8.6	1.3	5.1	3.2	15.1	2.1	.6	4.0	3.0	3.7
Mergansers	4.7	3.6	2.1	4.1	8.2	4.3	9.2	2.2	3.7	11.2
Subtotal	13.3	4.7	7.2	7.3	23.3	6.4	9.8	6.2	6.7	14.9
Total ducks	11,216.4	11,158.4	8,360.8	6,718.8	9,586.2	7,588.1	5,399.6	7,435.8	7,548.1	5,570.0
Canada goose	8.7	12.9	9.3	12.6	15.3	15.9	21.5	22.6	30.7	33.0
Am. coot	1,177.4	1,513.0	440.0	433.6	1,309.1	634.3	305.1	282.8	673.4	566.7

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[a] Adjusted for visibility bias.

Table 80 cont. Long-term trend in waterfowl breeding population estimates by species in Southern Saskatchewan, 1955-88 (estimates in thousands)[a]

Species	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Ducks										
Dabblers										
Mallard	1,104.1	1,965.6	2,015.8	2,119.9	2,164.1	2,958.3	3,401.5	2,670.9	2,367.0	2,079.5
Am. black duck	.0	.0	.0	.0	.0	.0	.7	.0	.0	.0
Gadwall	506.6	677.9	469.2	689.7	556.9	526.4	637.1	572.9	334.0	626.9
Am. wigeon	774.8	845.1	690.1	586.6	787.1	812.1	916.3	673.1	1,050.6	751.2
Green-winged teal	126.6	275.0	373.6	215.7	521.0	439.2	390.0	243.8	313.0	303.7
Blue-winged teal	1,070.0	1,496.7	1,395.7	862.4	1,036.0	2,160.5	1,917.8	1,819.7	1,842.8	1,520.9
N. shoveler	308.1	843.6	793.6	485.9	750.6	760.8	907.7	922.0	538.4	705.2
N. pintail	716.6	1,595.4	1,671.0	774.6	1,956.1	2,417.2	2,222.1	2,261.6	1,096.3	2,186.1
Subtotal	4,606.8	7,697.3	7,409.0	5,732.4	7,769.6	10,052.5	10,391.2	9,164.0	7,652.1	8,173.5
Divers										
Redhead	90.5	149.5	213.1	69.2	210.6	189.3	279.6	138.1	179.2	179.0
Canvasback	111.3	112.9	148.7	91.0	197.0	255.4	191.8	137.7	229.0	181.7
Scaups	155.2	185.6	316.4	189.4	306.5	325.0	221.7	239.2	223.0	377.9
Ring-necked duck	26.7	18.5	12.0	1.7	7.5	16.1	8.3	9.8	9.6	49.1
Goldeneyes	9.9	11.8	16.2	25.4	9.8	17.5	16.0	5.1	23.3	15.7
Bufflehead	33.3	20.0	25.9	43.7	56.1	28.9	18.4	48.1	25.3	26.9
Ruddy duck	48.6	83.3	77.7	87.2	58.6	52.1	76.0	97.8	153.5	131.1
Subtotal	475.3	581.6	810.0	507.6	846.1	882.3	811.8	675.8	842.9	961.4
Miscellaneous										
Oldsquaw	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Eiders	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Scoters	10.0	3.1	2.4	7.5	4.6	.6	6.2	3.0	5.7	2.7
Mergansers	3.3	.0	.0	.6	.9	5.5	.8	.0	1.4	.3
Subtotal	13.3	3.1	2.4	8.1	5.5	6.1	7.0	3.0	7.1	3.0
Total ducks	5,095.4	8,282.0	8,221.4	6,248.1	8,621.0	10,940.9	11,210.0	9,842.8	8,502.1	9,137.9
Canada goose	2.5	3.2	1.6	1.0	5.5	4.1	8.8	10.0	6.5	8.7
Am. coot	256.6	333.3	357.9	450.7	607.5	988.7	963.1	569.7	931.9	1,088.6

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[a] Adjusted for visibility bias.

Table 80 cont. Long-term trend in waterfowl breeding population estimates by species in Southern Saskatchewan, 1955-88 (estimates in thousands)[a]

Species	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
Ducks										
Dabblers										
Mallard	3,948.4	5,339.8	4,518.6	5,066.4	2,192.1	3,287.7	1,650.4	1,133.6	1,552.5	1,379.1
Am. black duck	.8	.0	1.9	.0	.0	.0	.0	.0	.0	.0
Gadwall	366.8	436.9	390.9	144.6	185.0	237.1	717.8	632.0	307.5	408.7
Am. wigeon	997.7	1,460.4	859.4	1,113.4	571.9	598.2	453.8	760.0	505.9	488.2
Green-winged teal	430.1	574.4	316.3	238.1	142.4	245.6	412.1	199.2	207.7	201.8
Blue-winged teal	2,758.2	3,428.6	2,528.0	1,891.7	1,247.8	1,337.3	1,223.1	674.6	459.9	1,022.1
N. shoveler	809.2	1,037.3	757.4	396.9	302.2	720.6	482.5	426.8	199.2	375.3
N. pintail	4,113.3	5,105.7	2,700.5	1,556.9	645.2	1,418.7	846.6	596.7	835.2	853.4
Subtotal	13,424.5	17,383.1	12,073.0	10,408.0	5,286.6	7,845.2	5,786.3	4,422.9	4,067.9	4,728.6
Divers										
Redhead	225.8	470.8	280.2	150.9	115.1	140.3	57.2	157.6	36.3	84.5
Canvasback	240.7	362.1	330.5	234.2	76.0	107.7	99.9	166.9	87.2	121.6
Scaups	723.9	1,074.1	757.0	440.0	577.3	409.1	673.2	324.3	153.6	133.5
Ring-necked duck	31.4	19.4	12.6	13.4	31.8	15.9	9.6	.0	24.0	11.2
Goldeneyes	13.3	23.9	19.9	11.0	15.0	24.1	11.9	8.7	4.4	2.9
Bufflehead	11.1	13.4	22.2	10.1	13.7	19.4	12.4	2.9	17.4	19.3
Ruddy duck	155.8	330.2	158.1	72.4	269.4	133.1	80.9	67.3	40.3	37.6
Subtotal	1,402.0	2,293.9	1,580.5	932.0	1,098.3	849.6	945.1	727.7	363.2	410.6
Miscellaneous										
Oldsquaw	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Eiders	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Scoters	6.5	16.2	1.0	12.0	5.8	6.6	3.1	.0	4.6	7.1
Mergansers	.3	.0	.0	.0	.3	7.2	1.7	.0	6.0	1.5
Subtotal	6.8	16.2	1.0	12.0	6.1	13.8	4.8	.0	10.6	8.6
Total ducks	14,833.3	19,693.2	13,654.5	11,352.0	6,391.0	8,708.6	6,736.2	5,150.6	4,441.7	5,147.8
Canada goose	-	-	-	-	1.8	2.6	2.5	2.5	3.6	3.2
Am. coot	1,265.3	2,104.6	1,503.3	448.2	489.4	383.5	211.0	252.5	109.4	202.0

[a] Adjusted for visibility bias.

Table 81. Status of waterfowl breeding population estimates by species and stratum in Southern Saskatchewan, comparing 1988 with 1987, the 1978-1987 previous 10-year mean, and the 1955-1987 long-term mean (estimates in thousands).[a]

Species	Stratum (1988)						1988 Total	1987 Total	10-Year Mean	Long-Term Mean	Percent Change from		
	30	31	32	33	34	35					1987	10-Year Mean	Long-Term Mean
Ducks													
Dabblers													
Mallard	198.4	234.4	202.6	35.2	171.5	46.8	888.9	1,286.8	1,699.5	2,370.5	- 31	- 48	- 63
Am. black duck	.0	.0	.0	.0	.0	.0	.0	2.8	.4	.2	-100	-100	-100
Gadwall	88.0	72.7	88.2	11.8	36.8	16.5	314.0	539.2	545.3	513.7	- 42	- 42	- 39
Am. wigeon	207.0	184.3	160.7	15.3	37.2	16.7	621.2	546.8	560.9	704.3	+ 14	+ 11	- 12
Green-winged teal	98.8	128.9	34.8	4.7	79.0	51.4	397.6	351.9	274.9	296.1	+ 13	+ 45	+ 34
Blue-winged teal	90.6	148.5	118.4	40.1	75.4	58.5	531.5	674.9	1,033.8	1,457.1	- 21	- 49	- 64
N. shoveler	108.1	112.1	46.9	41.9	36.0	16.6	361.6	643.8	582.0	615.7	- 44	- 38	- 41
N. pintail	28.5	29.3	37.4	24.4	22.0	3.1	144.7	344.0	817.0	1,482.5	- 58	- 82	- 90
Subtotal	819.4	910.4	688.9	173.3	457.9	209.6	3,259.5	4,390.2	5,513.8	7,740.1	- 26	- 41	- 56
Divers													
Redhead	90.5	104.8	7.8	.0	8.5	3.3	214.8	125.4	230.7	197.3	+ 71	- 7	+ 9
Canvasback	47.7	56.2	23.0	.7	20.5	2.2	150.4	184.2	173.3	183.6	- 18	- 13	- 18
Scaups	127.4	91.5	29.6	3.4	14.8	6.9	273.5	612.8	553.1	459.2	- 55	- 51	- 40
Ring-necked duck	10.8	20.2	2.3	.0	2.0	.0	35.3	33.9	44.5	28.2	+ 4	- 21	+ 25
Goldeneyes	.0	3.2	.0	.0	.8	.8	4.8	25.6	24.9	19.5	- 81	- 81	- 75
Bufflehead	14.2	7.1	.0	.0	1.6	4.7	27.6	42.4	44.4	32.1	- 35	- 38	- 14
Ruddy duck	13.8	24.3	3.0	3.8	32.8	2.3	80.0	138.7	136.1	118.4	- 42	- 41	- 32
Subtotal	304.4	307.3	65.7	7.9	81.1	20.1	786.5	1,163.0	1,207.0	1,038.3	- 32	- 35	- 24
Miscellaneous													
Oldsquaw	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	NC	NC	NC
Eiders	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	NC	NC	NC
Scoters	2.2	.4	.0	.0	.0	.0	2.6	2.7	4.0	4.9	- 3	- 34	- 49
Mergansers	2.3	.6	.8	.0	.0	.0	3.7	4.3	4.8	2.7	- 15	- 24	- 42
Subtotal	4.5	1.0	.8	.0	.0	.0	6.3	7.0	8.8	7.6	- 10	- 29	- 15
Total ducks	1,128.3	1,218.6	755.4	181.2	538.9	229.8	4,052.2	5,560.2	6,729.6	8,786.0	- 27	- 40	- 52
Canada goose	6.1	12.9	10.2	3.0	6.5	3.4	42.2	42.9	27.0	11.2	- 2	+ 56	+277
Am. coot	225.9	378.8	126.7	7.7	85.9	7.5	832.5	277.9	578.7	671.0	+200	+ 44	+ 24

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[a] Adjusted for visibility bias.

Table 82. Long-term trend in waterfowl brood and late-nesting indices in southern Saskatchewan (index in thousands).

Year	Duck Brood Index	Late Nesting Index		
		All Duck Species	Mallard	Pintail
1978	130.4	194.9	55.4	16.2
1979	107.3	293.2	87.3	16.1
1980	130.7	81.2	23.3	7.4
1981	77.9	81.4	22.3	6.3
1982	63.2	188.1	62.0	7.6
1983	69.5	158.1	47.1	7.3
1984	70.5	64.0	21.8	3.4
1985	95.0	81.1	28.0	4.5
1986	101.0	53.7	15.0	1.6
1987	105.4	23.1	7.9	0.7
1977-87 Average	99.0	144.1	42.6	9.5
1988	74.3	29.7	5.4	1.6
% change from 1987	-30	+29	-32	+128
% change from 10-year average	-22	-76	-77	-63
% change from long-term mean (1955-87)	-46	-82	-82	-81

Duck seasons and bag limits for 1988 are:

Ducks (All hunters)	WMZ 1 to 42, 44 to 47, and 52, including Elbow and Valeport Wildlife Management Units; and starting Sept. 21, Last Mountain Lake Wildlife Management Unit	Sept 12 - Dec 10	5 daily (3 only may be mallards) 10 possession (6 only may be mallards)
	WMZ 43, 48 to 51, and 53 to 76, including Clearwater River, Lac La Ronge, Meadow Lake and Nipawin Provincial Parks; Fort a la Corne and Horsehide Lake Wildlife Management Units; and Bronson Forest Recreation Site	Sept 1 - Dec 10	5 daily (3 only may be mallards) 10 possession (6 only may be mallards)

GEESE

1987 Hunting Activity and Harvest

Total Saskatchewan goose harvest (all species) decreased by 16.4% from 159,111 in 1986 to 133,052 in 1987, 21% below the 10 year average (Table 83; Figure 11). Canada geese (78,343) comprised 59% of the harvest followed by white-fronted (27,732) and lesser snow (24,765) geese each contributing 21% and 19%, respectively of the total harvest (Table 84). The majority of the goose harvest occurred between September 21 and October 26 (Figure 12).

1988 Goose Populations and Regulations

Populations of large Canada geese continue to thrive in agricultural Saskatchewan. Field researchers report that the Western Prairie and Great Plains populations have been increasing in recent years (1980-84) while the Hi-line population has remained stable at approximately 93,000 birds. These prairie nesting geese have been the cause of an increasing number of spring and summer grazing complaints. Snow geese have been increasing in recent years and Saskatchewan sportsmen have been encouraged to harvest more of these geese.

Tail fans submitted to the National Species Composition Survey suggested reproduction among Arctic geese in 1987 was similar to 1986 (Table 85).

With the exception of calendar adjustments, goose season dates and bag limits remain the same as 1987.

1988 season dates and bag limits are:

WMZ 1 to 14, 19 and 22 to 29, including Elbow Wildlife Management Unit	Sept. 21 - Dec. 10	5 daily (2 only may be white-fronted geese) 10 possession (4 only may be white-fronted geese).
WMZ 15, 16, 17, 18, 20, 21, 30 to 42, 44 to 47 and 52, including Valeport Wildlife Management Unit and starting Sept. 21 in Last Mountain Lake Wildlife Management Unit	Sept. 14 - Dec. 10	5 daily (3 only may be white-fronted geese) 10 possession (6 only may white-fronted geese).
WMZ 43, 48 to 51, and 53 to 76, including Clearwater River, Meadow Lake, Nipawin and Lac La Ronge Provincial Parks; Horsehide Lake and Fort a la Corne Wildlife Management Units; and Bronson Forest Recreation Site	Sept. 1 - Dec. 10	5 daily (3 only may be white-fronted geese) 10 possession (6 only may white-fronted geese)

Goose season for Canadian residents and non-residents of Canada begins September 28 in WMZ 1 to 52, 54, 56 and 57.

Note: Starting September 28 in WMZ 15 to 18, 20 to 22, 30 to 43 and 48 to 76: 3 additional Snow or Ross' geese may be taken daily, and 6 additional Snow or Ross' geese may be kept in possession.

Starting October 15 in WMZ 1 to 14, 19, 23 to 29 and 44 to 47: 3 additional Snow or Ross' geese may be taken daily, and 6 additional Snow or Ross' geese may be kept in possession.

Note: Prior to October 23, in WMZ 1 to 59, 67, 68 and 69, any open season for geese includes that portion of the day from one-half hour before sunrise to 12:00 noon local time. From October 24 to December 10 geese may be hunted all day in all open zones.

Table 83. Estimated harvest of geese in Saskatchewan by federal harvest zone, 1977-1987 (after Saskatchewan Department of Parks, Recreation and Culture and CWS, Ottawa).

	Federal Estimates				
Year	Zone 1	Zone 2	Zone 3	Total*	Provincial Estimates
1977	70,840	11,793	39,228	121,869	164,523
1978	72,519	16,517	49,481	138,517	146,648
1979	80,784	22,553	49,097	152,434	163,829
1980	102,439	18,008	50,942	171,389	184,786
1981	76,624	19,544	45,220	141,388	158,644
1982	79,548	24,040	47,408	150,996	155,188
1983	114,289	23,972	71,874	210,135	213,026
1984	88,833	20,938	60,386	170,158	162,219
1985	88,958	19,357	57,333	165,648	176,362
1986	72,661	21,885	58,813	153,359	159,111
1977-86 Average	84,750	19,861	52,978	157,589	168,434
1987	82,907	32,876	54,449	170,232	133,052
% Change 1987 from 1986	+14.1%	+50.2%	-7.4%	+11.0%	-16.4%
1987 from Average	-2.1%	+65.5%	+7.4%	+8.0%	-21.0%

* Total includes Zones 1, 2 and 3

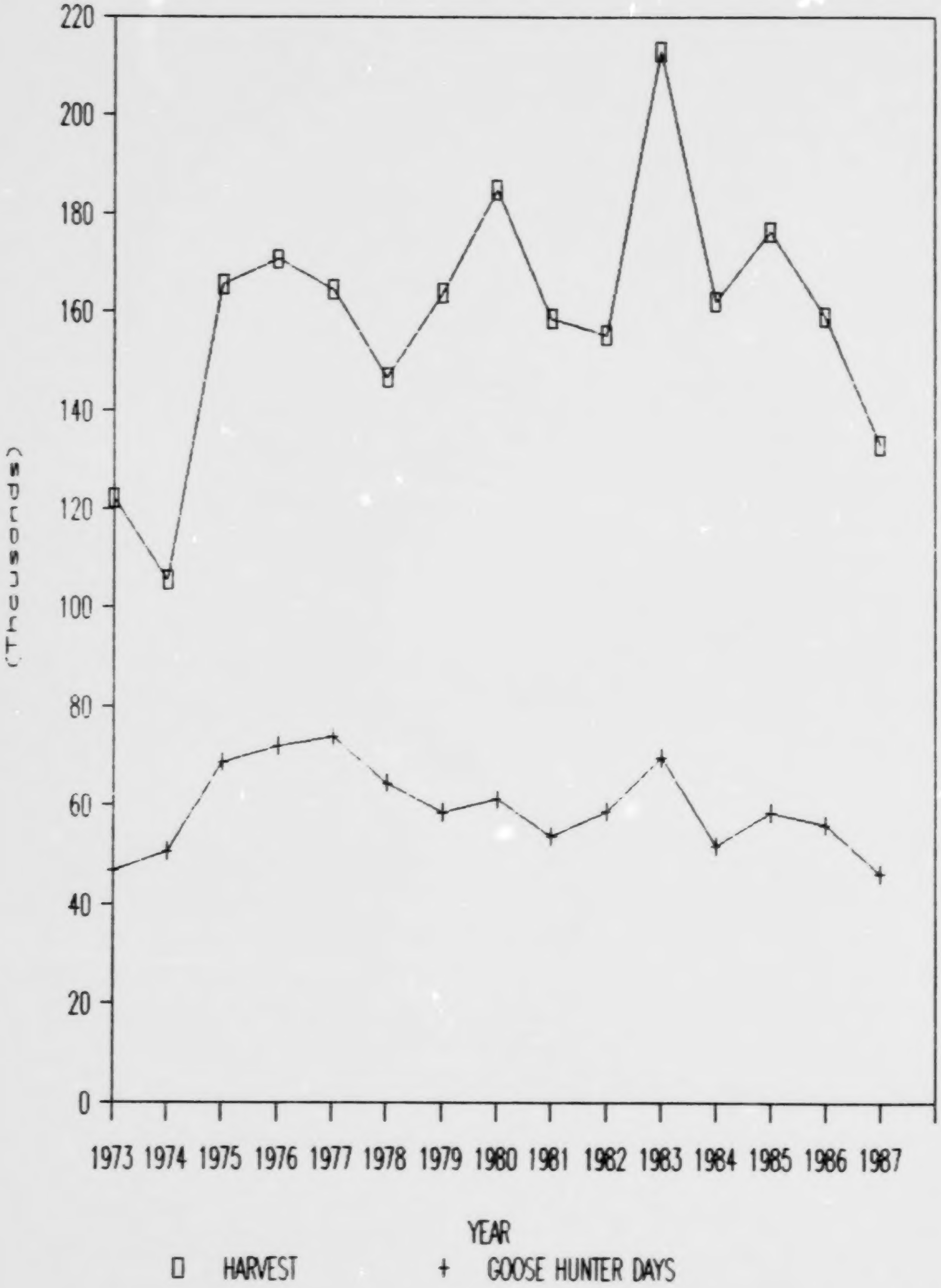

Figure 13. Saskatchewan goose hunter days and harvest, 1973-1987

Table 84. Goose harvest in Saskatchewan, 1982-1987

	Species				
Year	Canada	White-fronted	Lesser Snow	Ross'	Totals
1982	83,188	41,644	25,683	4,672	155,188
1983	122,377	43,001	42,832	4,816	213,026
1984	85,758	40,405	31,469	4,358	161,990
1985	95,257	38,710	38,297	4,097	176,361
1986	85,642	35,600	34,842	3,027	159,111
1982-86 Average	94,444	39,872	34,625	4,194	173,135
1987	78,343	27,732	24,765	2,213	133,052
% Change					
1987 from 1986	-9%	-22%	-29%	-27%	-16%
1987 from Average	-17%	-30%	-28%	-47%	-23%

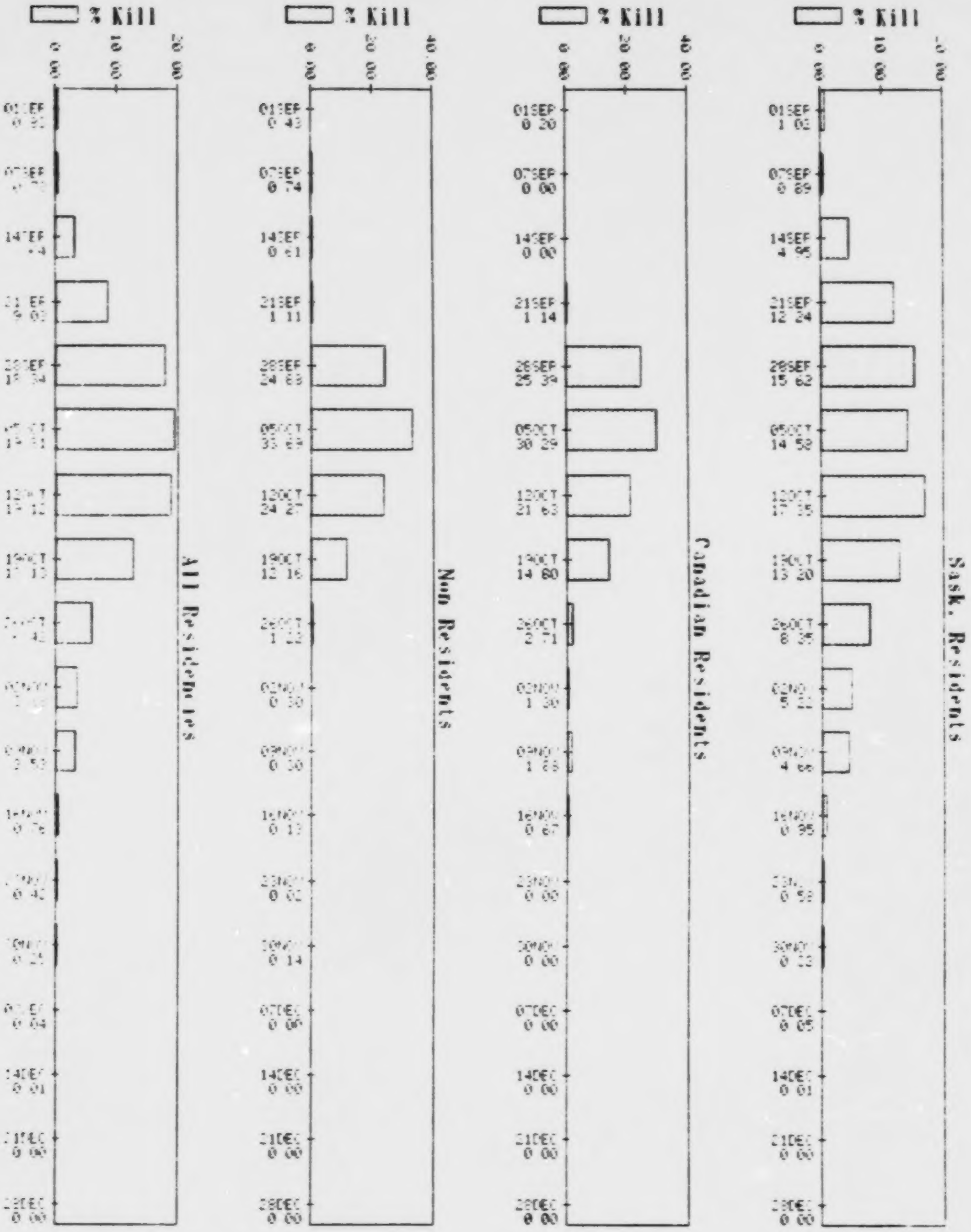

Figure 14. Saskatchewan 1987 goose harvest by weekly intervals.

Table 85. Age ratio of goose species harvested in western Canada (Alberta-Saskatchewan-Manitoba) 1980-1987. After tail fans submitted to the National Species Composition Survey. Preliminary data from Wing Bee Hand Tally. Sample size in parentheses.

Hunting	Adult:Immature Ratios				
Season	L. Canada	S. Canada	Whitefront	Ross'	Snow*
1980	1:0.51(939)	1:1.62(467)	1:1.05(435)	1:0.79(25)	1:0.84(540)
1981	1:0.23(879)	1:1.38(386)	1:1.00(400)	1:1.10(21)	1:1.14(492)
1982	1:0.30(652)	1:0.91(313)	1:0.59(219)	1:1.00(28)	1:0.74(634)
1983	1:0.49(902)	1:1.76(623)	1:1.01(334)	1:1.36(26)	1:1.04(696)
1984	1:0.42(874)	1:1.38(486)	1:1.05(307)	1:1.23(29)	1:1.12(701)
1985	1:0.37(360)	1:1.29(156)	1:1.27(216)	1:2.67(22)	1:0.70(179)
1986	1:0.26(1162)	1:0.66(384)	1:0.50(337)	1:2.11(28)	1:0.47(496)
1987	1:0.26(1366)	1:0.98(434)	1:0.75(304)	1:1.83(34)	1:0.70(568)

*Includes blue geese

SANDHILL CRANES

1987 Hunting Activity and Harvest

Sandhill crane harvest in Saskatchewan was traditionally small until 1985 when 6,200 birds were taken. This was nearly double the number taken in previous years (Table 86). The increase in crane harvest was sustained in 1986 (7,480), but decreased by 36% in 1987 (4,774) to 4% above the 8-year average.

1988 Populations and Regulations

Spring population data from 1974 to 1987 indicate an increasing population of sandhill cranes in the Central Flyway. It does not appear that present harvest regulations are having an adverse effect on the status of these birds.

The 1988 season dates and bag limits for sandhill cranes remain similar to last year. The inclusion of sandhill cranes on Appendix II of the CITES treaty continues to pose a problem for non-resident alien hunting, therefore, the 1988 season will continue to be restricted to residents of Canada.

1988 season dates and bag limits are:

WMZ 19, 21 to 24, 29, 30, 37 to 42, 44 and 52	Sept. 1 - Sept. 13	5 daily, 10 possession
WMZ 11 to 14	Sept. 12 - Sept. 20	5 daily, 10 possession

Table 86. Estimated retrieved kill of Sandhill Cranes in Saskatchewan, 1979-1987 (federal estimates after Progress Note 126 and interim data via L. Métras, CWS Ottawa; provincial estimates after Department of Parks, Recreation and Culture).

Year	Sandhill Crane Harvest	
	Federal Estimate	Provincial Estimate
1979	2,821	7,052
1980	4,690	4,230
1981	2,452	2,221
1982	2,040	3,478
1983	2,720	2,965
1984	3,043	3,110
1985	4,468	6,200
1986	4,455	7,480
Average 1979-86	3,336	4,592
1987	4,522	4,774
% Change		
1987 from 1986	+2%	-36%
1987 from Average	+36%	+4%

OTHER WATERFOWL REGULATIONS

The 500 metre hunting restrictions on 44 major waterfowl staging areas are set by the Department of Parks, Recreation and Culture. No changes in 500 metre hunting restrictions have been made for the 1988 hunting season.

A request for a 500 metre restriction on the North Saskatchewan River from the Borden bridge to the Forks will be evaluated in 1988.

Clearwater River Provincial Park, designated in 1986, is open to both waterfowl and upland game bird hunting during the open season in WMZ 73 and 75.

UPLAND GAME BIRDS

1987 HUNTING ACTIVITY

Upland bird hunting activity remained above average, and similar to 1976-1980 levels, with an 11% increase in hunter recreation days (83,180) but a decrease of 14% in active hunters due primarily to a 15% reduction in game bird licence sales (Table 87; Figure 13; Appendix 15). Active hunters were 18% below the long-term average (1973-1986) but the 24,918 active upland bird hunters each spent an average of 3.3 days hunting, the highest level in recent times. Activity (hunter days) increased for all upland bird species except sharp-tailed grouse in 1987, and since 1973, the level of last fall's hunt activity has only been exceeded in 1976 and 1977 (Table 87).

An estimated 91% of active upland bird hunters were successful in bagging one or more birds and each successful hunter harvested an average of 13.4 upland birds. U.S. hunters were slightly more successful than Saskatchewan resident hunters, harvesting 14.7 birds per hunter while out-of-province Canadians harvested 13.7 birds each (Table 88).

The Farmland Zones (WMZ 15-30) continued to receive the heaviest hunting pressure (Table 89) with 38% of total upland hunter days generated in these zones. On an area basis, hunting pressure dropped slightly in the Farmlands with 0.34 hunter days/km^2 compared to 0.32 hunter days/km^2 in the Grasslands. In 1987, WMZ 15 and 19 experienced the heaviest upland bird hunting pressure with 0.99 and 0.72 days/km^2, respectively. WMZ 4 and 12 received between 0.50 and 0.65 hunter days/km^2, while WMZ 5, 10, 11, 17, 21 and 31 received between 0.40 and 0.499 hunter days/km^2.

As the area of remaining native habitat in each new wildlife management zone has not yet been calculated, hunting pressure per unit of native habitat for species such as sharp-tailed grouse cannot be estimated.

Table 87. Saskatchewan Upland Game Bird Hunting Activity, 1973-1987

Year	Active Upland Bird Hunters	Upland Bird Hunter Days	Hunter Days/ Active Hunter
1973	28,500	53,275	1.9
1974*	21,857	37,801	1.7
1975*	27,812	48,161	1.7
1976*	39,035	86,525	2.2
1977*	41,772	93,496	2.2
1978	36,766	72,378	2.0
1979	36,373	72,096	2.0
1980	36,786	75,578	2.1
1981	32,147	68,988	2.1
1982	26,884	50,382	1.9
1983	28,266	60,146	2.1
1984	22,334	44,854	2.0
1985	20,777	40,149	1.9
1986	28,849	74,900	2.6
1973-1986 Average	30,583	62,766	2.05
1987	24,918	83,179	3.3
% Change			
1987 from 1986	-14%	+11%	+29%
1987 from Average	-18%	+32%	+63%

*Inaccurate data was published for these years prior to 1979 corrections.

Note: 1983-87 data includes pheasant hunter days.

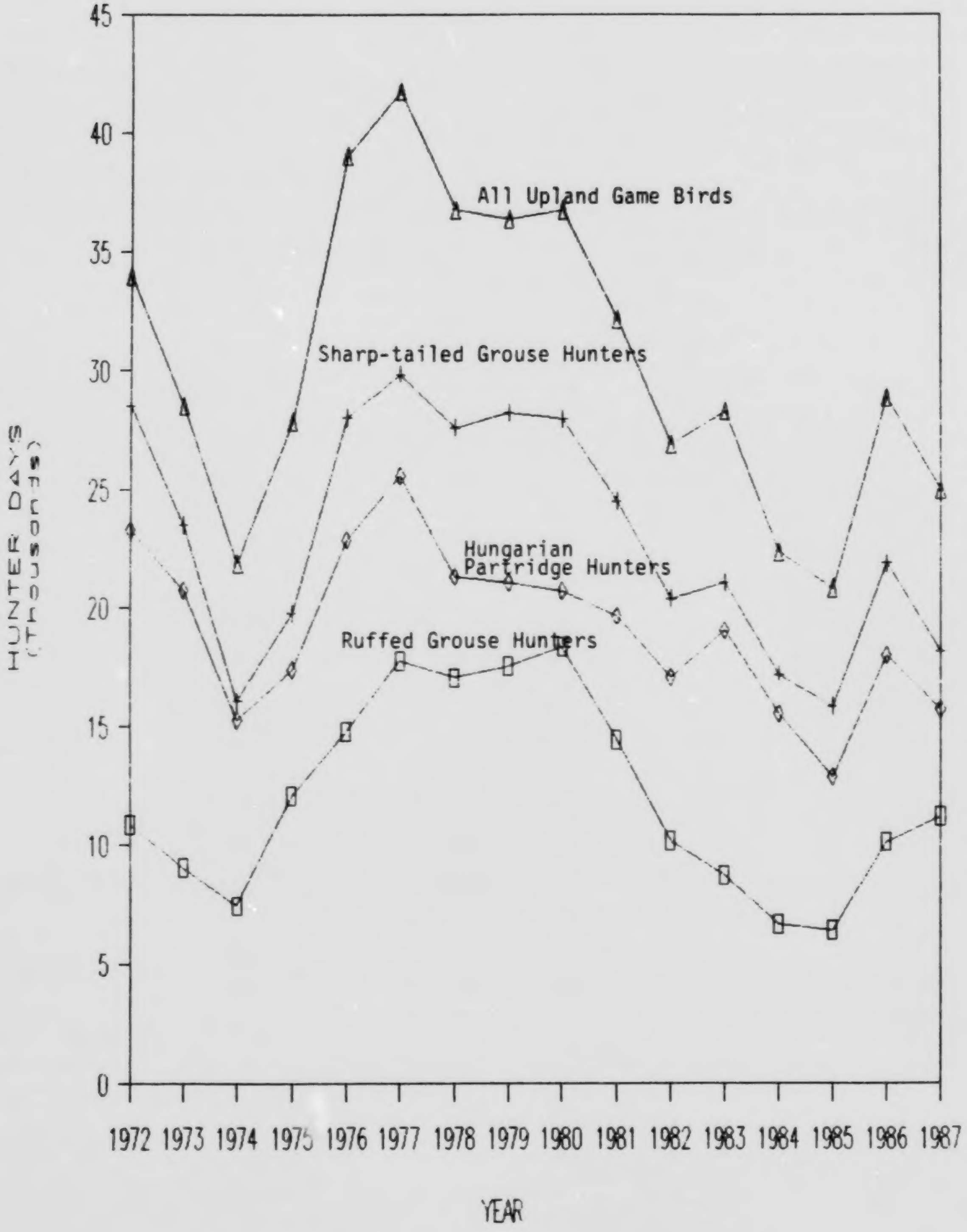

Figure 15. Upland game bird hunters active in Saskatchewan, 1972-87 (Active pheasant hunters included, 1983 to 1987)

Table 88. Saskatchewan upland game bird harvest summary, 1987.

	Sask. Resident		Non-Resident, Cdn.		Non-Resident, Alien		All Hunters	
SHARP-TAILED GROUSE	65,341	83.54%	4,636	5.92%	8,233	10.52%	78,210	100.00%
Successful Hunters (% of Active)	12,403	(79.72%)	768	(81.45%)	1,393	(84.26%)	14,563	(80.23%)
Active Hunters	15,556		942		1,653		18,151	
Kill / Active Hunter	4.2		4.9		5.0		4.3	
Kill / Successful Hunter	5.3		6.0		5.9		5.4	
Days / Active Hunter	1.4		1.8		1.9		1.5	
Days / Successful Hunter	1.7		2.2		2.2		1.8	
Days Hunted	21,564.7		1,687.2		3,119.8		26,371.7	
HUNGARIAN PARTRIDGE	81,868	78.79%	7,000	6.73%	15,036	14.47%	103,903	100.00%
Successful Hunters (% of Active)	10,904	(81.49%)	722	(84.07%)	1,275	(87.28%)	12,901	(82.17%)
Active Hunters	13,379		859		1,461		15,699	
Kill / Active Hunter	6.1		8.2		10.3		6.6	
Kill / Successful Hunter	7.5		9.7		11.8		8.1	
Days / Active Hunter	1.6		2.1		2.4		1.7	
Days / Successful Hunter	2.0		2.5		2.7		2.1	
Days Hunted	21,682.9		1,793.6		3,447.8		26,924.4	
RUFFED GROUSE	83,186	93.13%	2,675	2.99%	3,460	3.87%	89,322	100.00%
Successful Hunters (% of Active)	8,907	(87.63%)	365	(94.11%)	539	(87.00%)	9,810	(87.82%)
Active Hunters	10,163		388		619		11,170	
Kill / Active Hunter	8.2		6.9		5.6		8.0	
Kill / Successful Hunter	9.3		7.3		6.4		9.1	
Days / Active Hunter	1.7		1.7		1.7		1.7	
Days / Successful Hunter	1.9		1.8		1.9		1.9	
Days Hunted	17,148.5		653.6		1,039.9		18,842.1	
SPRUCE GROUSE	13,385	94.17%	289	2.03%	539	3.78%	14,213	100.00%
Successful Hunters (% of Active)	2,507	(85.20%)	61	(80.00%)	87	(82.35%)	2,654	(84.97%)
Active Hunters	2,942		76		105		3,123	
Kill / Active Hunter	4.5		3.8		5.1		4.6	
Kill / Successful Hunter	5.3		4.8		6.2		5.4	
Days / Active Hunter	1.2		1.4		1.4		1.2	
Days / Successful Hunter	1.4		1.8		1.7		1.4	
Days Hunted	3,582.7		106.4		148.6		3,837.7	
PHEASANT	16,439	100.00%	0	0.00%	0	0.00%	16,439	100.00%
Successful Hunters (% of Active)	3,968	(71.84%)	0	(0.00%)	0	(0.00%)	3,968	(71.84%)
Active Hunters	5,523		0		0		5,523	
Kill / Active Hunter	3.0		0.0		0.0		3.0	
Kill / Successful Hunter	4.1		0.0		0.0		4.1	
Days / Active Hunter	1.3		0.0		0.0		1.3	
Days / Successful Hunter	1.8		0.0		0.0		1.8	
Days Hunted	7,177.9		0.0		0.0		7,177.9	
PTARMIGAN	330	100.00%	0	0.00%	0	0.00%	330	100.00%
Successful Hunters (% of Active)	37	(54.54%)	0	(0.00%)	0	(0.00%)	37	(54.54%)
Active Hunters	68		0		0		68	
Kill / Active Hunter	4.8		0.0		0.0		4.8	
Kill / Successful Hunter	8.8		0.0		0.0		8.8	
Days / Active Hunter	0.6		0.0		0.0		0.6	
Days / Successful Hunter	1.2		0.0		0.0		1.2	
Days Hunted	43.5		0.0		0.0		43.5	
ALL UPLAND GAMEBIRDS	260,550	86.15%	14,600	4.82%	27,267	9.01%	302,416	100.00%
Successful Hunters (% of Active)	19,705	(90.77%)	1,064	(89.74%)	1,857	(91.74%)	22,626	(90.80%)
Active Hunters	21,708		1,186		2,074		24,918	
Kill / Active Hunter	12.0		12.3		13.5		12.1	
Kill / Successful Hunter	13.2		13.7		14.7		13.4	
Days / Active Hunter	3.3		3.6		3.8		3.3	
Days / Successful Hunter	3.6		4.0		4.2		3.7	
Days Hunted	[illegible]		4,240.8		7,749.9		[illegible]	

Table 89. Saskatchewan Upland Game Bird Hunting Activity by Ecological Zone (1985-1987)

	Total Upland Bird Hunter Days			% of Total Days			Upland Bird Hunter days/km^2		
	1985	1986	1987	1985	1986	1987	1985	1986	1987
Grassland (64,799 km^2, 10.3%)	10,666	16,844	21,090	26.6%	22.5%	25.4%	0.165	0.260	0.325
Farmlands (90,826 km^2, 14.5%)	16,720	32,943	31,225	41.6%	44.0%	37.6%	0.184	0.363	0.344
Parklands (98,446 km^2, 15.7%)	7,201	12,277	12,472	17.9%	16.4%	15.0%	0.073	0.125	0.127
Forest Fringe (26,262 km^2, 4.2%)	2,302	4,297	6,613	5.7%	5.7%	8.0%	0.088	0.164	0.252
Forest (165,120 km^2, 26.3%)	3,230	8,416	11,574	8.0%	11.2%	13.9%	0.020	0.051	0.070
Northern Shield (181,799 km^2, 29.0%)	28	56	75	.07%	.07%	.09%	<0.001	<0.001	0.0004
Provincial Total (627,252 km^2)	**40,145**	**74,833**	**83,049**	**100%**	**100%**	**100%**	**0.064**	**0.119**	**0.132**

SHARP-TAILED GROUSE

1987 Hunting Activity and Harvest

The 1987 provincial sharptail harvest stabilized at 78,210 similar to the 1986 estimate of 78,565 birds, the highest level since 1981 and only 6% below the 1972-86 average (Tables 90, 91; Figure 14). The 1987 season dates remained traditional with a September 21 opening (from September 22 in 1986) to promote hunter participation. Reproduction in 1987 was 10% below average with a provincial index of 1.27 juveniles/adult in the harvest (Table 92). Hunter success increased by 20% from 1986 levels with 4.3 birds harvested/active sharptail hunter which is also 20% above the 1972-1986 average. Active sharptail hunters decreased by 17% to 18,150, while the sharptail harvest/species hunter day increased from 2.73 to 2.97 birds (Table 93).

Hunter success in the Grasslands increased to 3.15 birds harvested/species hunter day from 2.91 in 1986 (Table 93). In the Farmlands, success also increased to 3.01 birds/day from 2.67 in 1986. Parkland sharptail hunters experienced equivalent success with 2.73 birds/hunter day similar to the 2.71 recorded in 1986. Geographic distribution of the hunter harvest and chronologic breakdown of the harvest are illustrated in Figures 15 and 16, respectively.

The five major sharp-tailed grouse hunting zones in 1987 based on harvest/km^2 for total zone area were Wildlife Management Zones 9, 10, 12, 15 and 19 (Table 94). Seventeen percent of the sharptail harvest occurred during the opening week (September 21 - September 27) of the southern season (Figure 16).

In summary, the 1987 sharptail season was characterized by reduced hunter participation but increased success and a similar harvest to 1986. Increased 1987 breeding populations, above average reproduction in the Grasslands, and the mild winter of 1986-87 were probably factors instrumental in maintaining the sharp-tailed grouse harvest near the long term average levels.

Table 90. Sharp-tailed Grouse Hunting Data for Saskatchewan, 1972-1987

Year	Active Sharptail Hunters	Sharp-tailed Grouse Hunter Days	Total All** Upland Bird Hunter Days	Upland Hunter Days/Active Sharptail Hunter	Sharptail Harvest	Sharptails Harvested/ Active Sharptail Hunter	Sharptails Harvested/ Upland Hunter Days
1972	28,575	N/A	56,534	2.0	107,813	3.8	1.9
1973	23,498	N/A	53,275	2.3	88,178	3.8	1.7
1974*	16,041	N/A	37,801	2.4	48,808	3.0	1.2
1975*	19,746	N/A	48,161	2.4	60,428	3.1	1.1
1976*	27,976	N/A	86,525	3.1	130,784	4.7	1.5
1977*	29,794	N/A	93,496	3.1	107,003	3.6	1.1
1978	27,577	41,153	72,379	2.6	104,497	3.8	1.4
1979	28,221	43,428	72,096	2.6	126,824	4.5	1.8
1980	27,949	43,044	75,578	2.7	108,455	3.9	1.4
1981	24,461	38,710	68,988	2.8	82,745	3.4	1.2
1982*	20,375	28,629	50,382	2.5	51,741	2.5*	1.0
1983	21,068	31,392	60,146	2.9	58,823	2.8	1.0
1984	17,164	17,421	44,854	2.6	54,233	3.2	1.2
1985	15,838	16,785	40,148	2.5	41,788	2.6	1.0
1986	21,860	28,761	74,900	3.4	78,565	3.6	1.0
1972-1986 Average	23,343	32,147	62,351	2.7	83,379	3.6	1.3
1987	18,151	26,372	83,179	4.6	78,210	4.3	0.9
% Change							
1987 from 1986	-17%	-8%	+11%	+34%	-0.45%	+20%	-10%
1987 from Average	-22%	-18%	+33%	+70%	-6%	+20%	-30%

* Inaccurate data was previously published for these years.
**1983-1987 total upland bird hunter days includes pheasant hunter days.

Table 91. Sharp-tailed grouse harvest and hunting pressure by Wildlife Management Zone, 1987.

WMZ	Total Kill	% of Harvest	Active Hunters per WMZ	Kill per sq.Km.	Kill per Day	Total Hunter Days	Species Hunter Days
1	3,146	4.02	636	0.378	1.5	2,106	846
2	3,406	4.36	871	0.320	0.9	3,689	1,102
3	44	0.06	62	0.010	0.6	78	22
4	2,247	2.87	1,137	0.277	0.4	5,280	1,004
5	1,556	1.99	639	0.261	0.6	2,763	579
6	604	0.77	187	0.144	1.6	387	146
7	108	0.14	83	0.057	0.7	161	27
8	453	0.58	123	0.133	1.4	314	128
9	2,398	3.07	604	0.698	1.8	1,333	667
10	3,042	3.89	772	0.858	1.8	1,662	880
11	648	0.83	193	0.658	1.3	488	199
12	320	0.41	188	0.932	1.9	173	106
13	1,687	2.16	557	0.413	1.3	1,349	514
14	1,335	1.71	584	0.239	1.0	1,307	441
GR	20,994	26.86	6,636	0.324	1.0	21,090	6,661
15	5,932	7.59	1,402	0.882	0.9	6,679	2,021
16	1,485	1.90	524	0.280	1.2	1,209	463
17	1,885	2.41	817	0.493	1.1	1,729	773
18	2,748	3.52	918	0.369	1.1	2,568	967
19	10,013	12.81	1,873	1.086	1.5	6,616	2,978
20	1,202	1.54	555	0.217	1.1	1,066	424
21	4,227	5.41	1,465	0.504	1.2	3,425	1,572
22	1,145	1.46	395	0.242	1.4	839	427
23	2,108	2.70	704	0.367	1.5	1,440	665
24	1,969	2.52	655	0.408	1.2	1,609	710
25	817	1.04	344	0.140	1.4	577	280
26	503	0.64	225	0.114	1.1	401	161
27	233	0.30	138	0.047	1.4	171	69
28	317	0.41	100	0.234	2.2	146	84
29	3,233	4.14	839	0.606	1.9	1,726	951
30	1,598	2.04	773	0.220	1.6	1,025	555
FA	39,414	50.42	11,727	0.434	1.3	31,225	13,102
31	1,505	1.92	285	0.597	1.3	1,131	503
32	403	0.52	208	0.145	2.0	202	107
33	848	1.09	395	0.218	0.7	1,246	342
34	580	0.74	276	0.108	1.4	420	223
35	521	0.67	225	0.199	1.2	423	179
36	628	0.80	306	0.121	1.0	625	230
37	969	1.24	470	0.086	0.9	1,135	387
38	490	0.63	308	0.076	0.8	593	170
39	403	0.52	301	0.053	0.6	714	157
40	1,166	1.49	462	0.215	1.5	768	443

WMZ	Total Kill	% of Harvest	Active Hunters per WMZ	Kill per sq.Km.	Kill per Day	Total Hunter Days	Species Hunter Days
41	542	0.69	315	0.075	1.2	472	192
42	567	0.73	300	0.077	0.5	1,135	217
43	750	0.96	284	0.111	0.8	901	253
44	870	1.11	393	0.190	1.1	782	305
45	998	1.28	454	0.130	1.2	866	380
46	288	0.37	166	0.048	1.2	242	96
47	561	0.72	225	0.098	0.7	817	239
PA	12,091	15.47	5,374	0.123	1.0	12,472	4,423
48	231	0.30	130	0.091	0.5	475	69
49	166	0.21	65	0.069	0.5	336	66
50	449	0.57	180	0.135	0.4	1,236	147
51	88	0.11	130	0.031	0.2	447	41
52	297	0.38	270	0.102	0.4	736	108
53	174	0.22	107	0.063	0.2	883	77
54	416	0.53	314	0.073	0.3	1,511	182
55	682	0.87	293	0.182	0.7	990	230
FF	2,504	3.20	1,490	0.095	0.4	6,613	921
56	368	0.47	180	0.078	0.2	1,621	141
57	205	0.26	81	0.062	0.4	534	65
58	187	0.24	68	0.083	0.7	252	53
59	244	0.31	130	0.042	0.3	707	79
60	87	0.11	62	0.023	0.2	438	31
61	12	0.02	19	0.004	0.1	105	6
62	300	0.38	156	0.080	0.4	750	127
63	493	0.63	273	0.087	0.4	1,339	231
64	230	0.29	93	0.065	0.4	593	78
65	93	0.12	37	0.014	0.3	345	31
66	111	0.14	77	0.010	0.2	662	46
67	560	0.72	276	0.065	0.3	2,221	217
68	116	0.15	84	0.028	0.2	780	63
69	56	0.07	56	0.007	0.1	617	28
70	18	0.02	39	0.002	0.1	203	8
71	35	0.04	21	0.002	0.3	114	23
72	31	0.04	19	0.002	0.3	124	16
73	19	0.02	25	0.000	0.1	168	3
FO	3,165	4.05	1,697	0.019	0.3	11,574	1,247
74	0	0.00	0	0.000	0.0	50	0
75	0	0.00	0	0.000	0.0	9	0
76	0	0.00	0	0.000	0.0	16	0
NS	0	0.00	0	0.000	0.0	75	0
>>>>>>>>>>>>>>>>>>>>> T O T A L >>>>>>>>>>>>>>>>>>>>>	78,169	100.00	26,923	0.125	0.9	83,049	26,354

* Hunter Days are based on all Upland Hunting.

* The Total Active Hunter value is NOT the true Provincial Total.

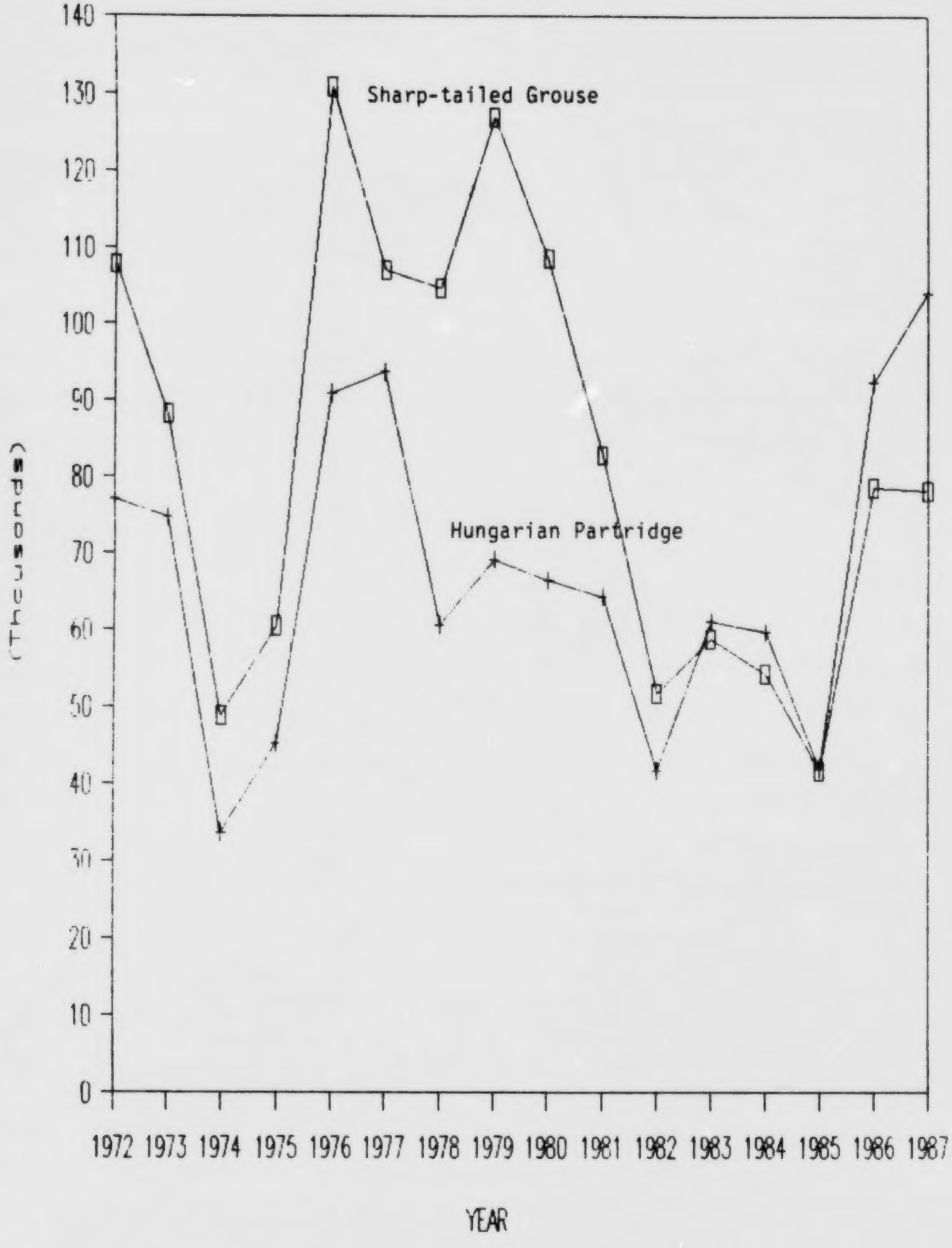

Figure 16. Saskatchewan Sharp-tailed Grouse and Hungarian Partridge Harvest (1972-1987)

1987 Sharp-tailed Grouse Reproduction

Sharptail reproduction, based on the young:adult ratio in a sample of the hunter harvest, fell below average in 1987 to 1.27 juveniles/adult (Table 92; Figure 17; Appendix 16, 17 and 18). This estimate represents a decrease (24%) in relation to 1986, and falls 10% below the 1975-1986 average, and 15% below the 1957-1987 long term average. While the Grasslands, Farmlands and Forest Ecological Zones exhibited poorer reproduction, sharp-tailed grouse in the Parklands did recover (+52%) from 1986 levels to slightly above average. Although reproductive success dropped 39% in the Grasslands in 1987, it did remain 30% above the 1975-86 average.

1988 Sharp-tailed Grouse Breeding Population

The 1988 provincial population index for breeding sharp-tailed grouse is 2.65 males/km^2 (Table 95; Figure 18), which represents an equivalent breeding population to 1987 levels for comparable survey areas. Slight increases are evident in the Grasslands and Parklands while a 9% reduction in the Farmlands reflects the 1987 reproductive trend in that area.

Provincially, sharptails have bounced back from the low breeding numbers of 1982-1985 to the higher levels which characterized the late 1970's (Appendix 19). The Grassland index of 3.02 males/km^2 is the highest on record reflecting continued excellent local reproduction in the summers of 1986 and 1987 and the two recent mild winters.

Estimates from survey blocks in the Grassland Zones (1-14) outranked the Farmland Zone estimates slightly with the highest overall density of breeding males (3.02/km^2). The highest densities on individual survey blocks occurred in the Farmlands. The Duperow survey area showed a density of 5.65 males/km^2 while the Val Jean survey area had a density of 8.51 males/km^2. The Goodwater survey area count decreased to 4.25 males/km^2 from the 5.47 recorded in 1987. The Tecumseh block in WMZ 33 again showed the highest individual density in the Parkland surveys with 4.21 males/km^2.

Table 92. Sharp-tailed Grouse Reproduction in Saskatchewan, 1982-1987
(Based on wing samples from harvest)

	(Juveniles/Adult in Harvest)							% Change	
Wildlife Management Division	1982	1983	1984	1985	1986	1975-86 Average	1987	1987 from 1986	1987 from Average (1975-1986)
Grassland	0.85	1.07	0.53	1.08	2.22	1.05	1.36	-39%	+30%
Farmland	2.19	1.62	1.06	1.94	1.60	1.55	1.17	-27%	-25%
Parkland	2.44	1.36	1.71	1.36	1.02	1.50	1.55	+52%	+3%
Forest Fringe plus Forest	2.50	0.58*	2.33	8.67*	3.29	2.72	1.38	-58%	-49%
Province	1.96	1.45	0.97	1.71	1.68	1.41 1.49**	1.27	-24%	-10% -15%**

* Sample less than 50 wings
**1957-1987 Average (31 years)

Table 93. Sharp-tailed Grouse Hunting Data for Saskatchewan by Ecological Divisions, 1986 vs 1987
Note: Northern Shield omitted due to lack of sharp-tailed grouse harvest

	Grassland Zones 1-14		Farmland Zones 15-30		Parkland Zones 31-47		Forest Fringe Zones 48-55		Forest Zones 56-73		Province Zones 1-76	
	1987	1986	1987	1986	1987	1986	1987	1986	1987	1986	1987	1986
Sharptail Harvest	20,994	18,393	39,414	39,794	12,091	15,033	2,504	2,289	3,165	2,822	78,169	78,352
(% of Total)	26.9	23.5	50.4	50.8	15.5	19.2	3.2	2.9	4.0	3.6	100%	100%
Harvest Pressure (Sharptail kill/km^2)	0.324	0.284	0.434	0.438	0.123	0.153	0.095	0.087	0.019	0.017	0.125	0.125
All Upland Bird Hunter Days	21,090	16,844	31,225	32,943	12,472	12,277	6,613	4,297	11,574	8,416	83,049	74,833
(% of Total)	25.4	22.5	37.6	44.0	15.0	16.4	8.0	5.7	13.9	11.2	100%	100%
Species Hunter Days	6,661	6,323	13,102	14,915	4,423	5,541	921	848	1,247	1,050	26,354	28,680
(% of Total)	25.3	22.0	49.7	52.0	16.8	19.3	3.5	3.0	4.7	3.7	100%	100%
Hunting Pressure (All Upland Bird Hunter days/km^2)	0.325	0.260	0.344	0.363	0.127	0.125	0.252	0.164	0.070	0.051	0.132	0.119
Hunter Success (Sharptail kill/ Upland Hunter Day)	1.00	1.09	1.26	1.21	0.97	1.22	0.38	0.53	0.27	0.34	0.94	1.05
Hunter Success (Sharptail Kill/ Species Hunter Day)	3.15	2.91	3.01	2.67	2.73	2.71	2.72	2.70	2.54	2.69	2.97	2.73

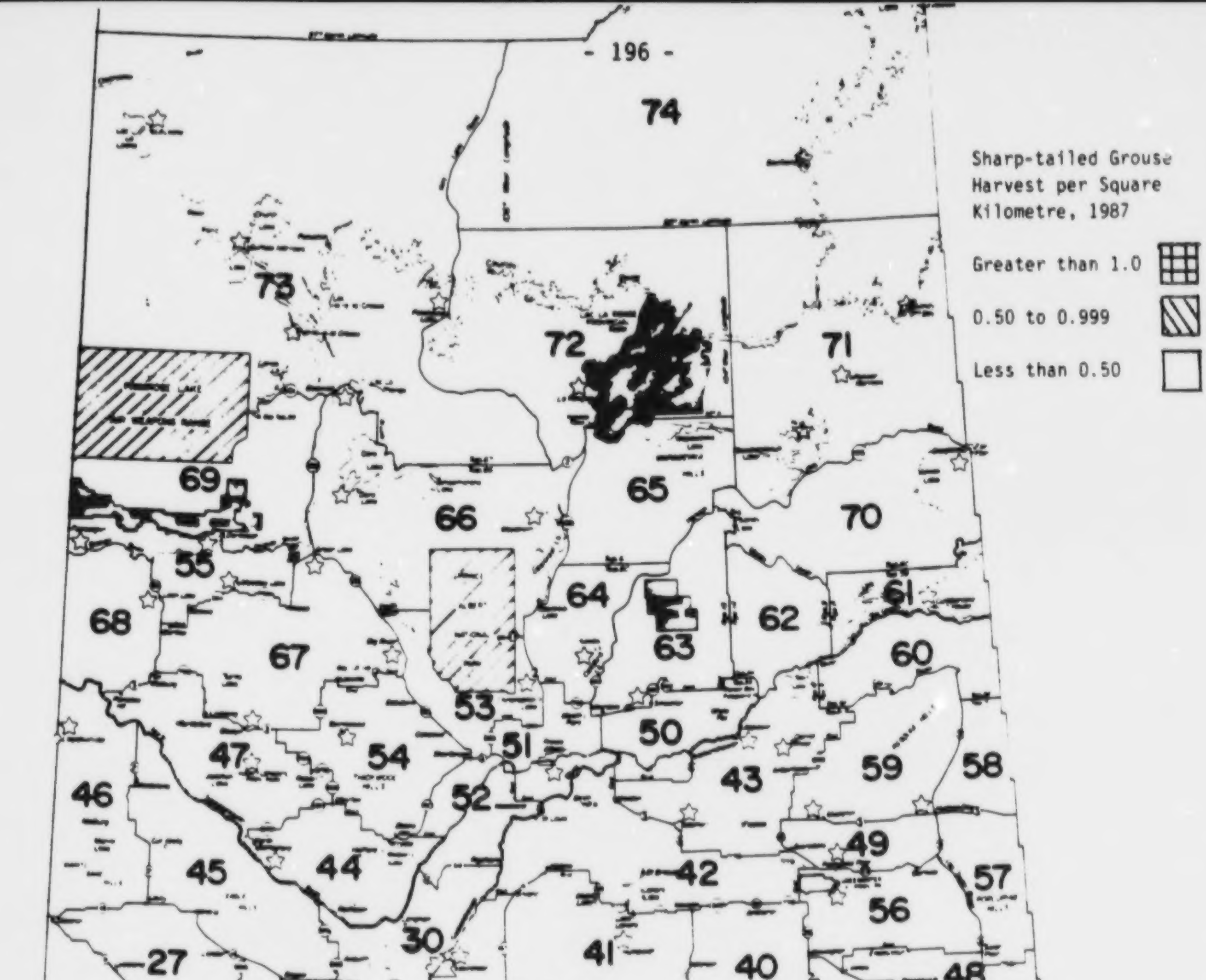
Sharp-tailed Grouse
Harvest per Square
Kilometre, 1987
Greater than 1.0 ▦
0.50 to 0.999 ▨
Less than 0.50 ☐
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Figure 17. Sharp-tailed Grouse Harvest Density, 1987

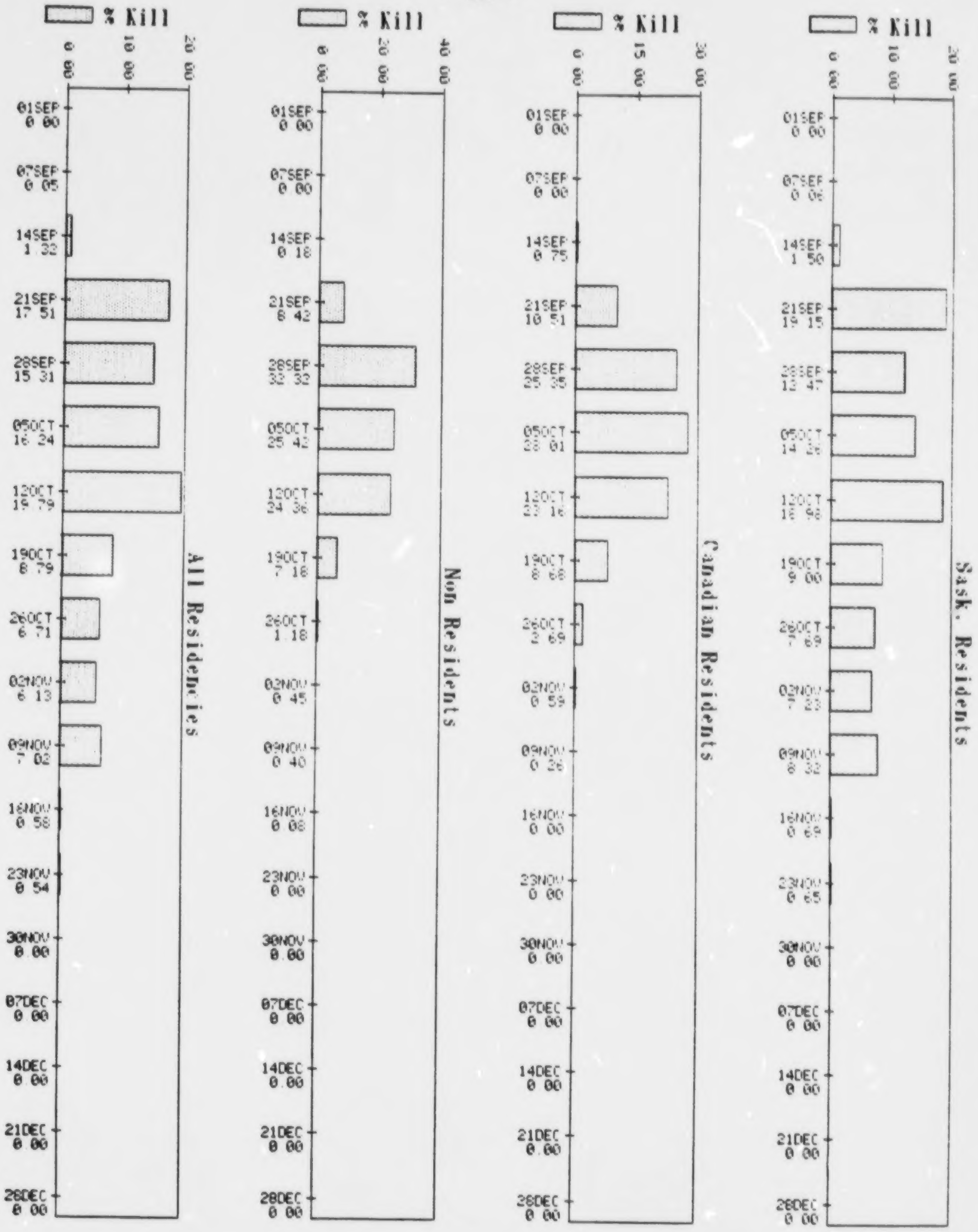

Figure 18. Saskatchewan 1987 sharp-tailed grouse harvest by weekly intervals.

Table 94. Five Important Sharp-tailed Grouse Harvest Zones in Saskatchewan, 1985-1987

	1985			1986			1987		
Rank*	Wildlife Mgmt. Zone	Sharptail Harvest/ Sq km Total Area	% of Provincial Harvest	Wildlife Mgmt. Zone	Sharptail Harvest/ Sq km Total Area	% of Provincial Harvest	Wildlife Mgmt. Zone	Sharptail Harvest/ Sq km Total Area	% of Provincial Harvest
1st	12	0.825	0.68	12	2.489	1.09	19	1.086	12.81
2nd	11	0.501	1.18	11	1.042	1.31	12	0.932	0.41
3rd	19	0.466	10.28	10	0.997	4.51	15	0.882	7.59
4th	10	0.353	3.00	19	0.837	9.85	10	0.858	3.89
5th	9	0.345	2.84	31	0.769	2.47	9	0.698	3.07
Total	Leading 5 Zones	0.429	17.98	Leading 5 Zones	0.907	19.23	Leading 5 Zones	0.933	27.77

*Ranked according to harvest density based on zone area in km^2; native habitat areas not yet available for 76 Wildlife Management Zones.

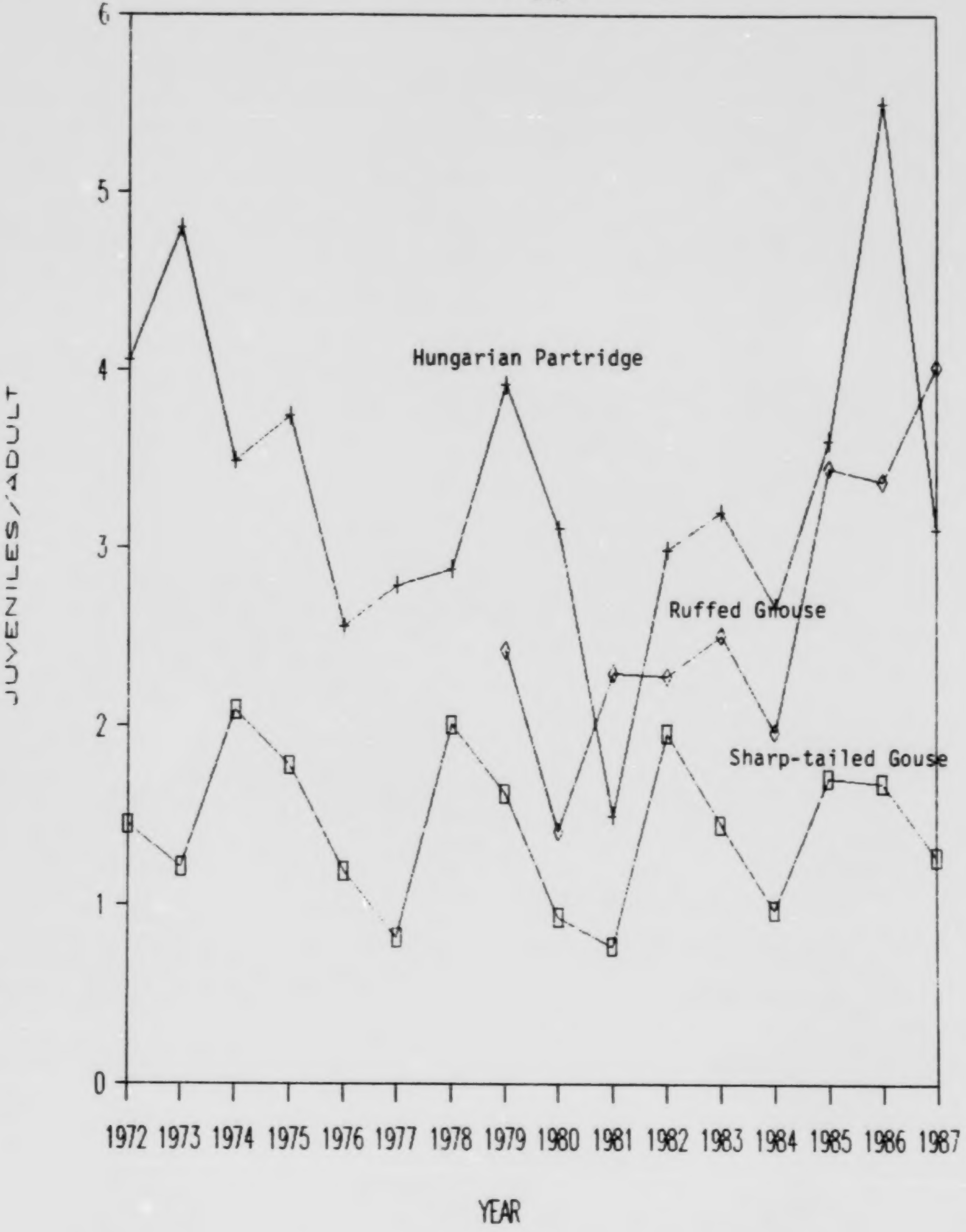

Figure 19. Saskatchewan Upland Game Bird Fall Age Ratios (Reproductive Index) 1972-1987

Table 95 . Sharp-tailed grouse breeding population surveys, spring 1988

Wildlife Management Zone	Surveyed Area	Area Surveyed (Km^2)	Breeding Males/Km^2 1985	1986	1987	1988 (Mi^2)
1	Amulet	51.8	0.44	1.24	2.12	2.70 (7.00)
4	Meyronne	41.4	0.97	1.13	3.28	3.28 (8.50)
5	Turkey Track	41.4	0.97	2.34	2.80	2.77 (7.18)
9	Bowies Ranch	49.2	0.90	1.24	2.56	3.21 (8.32)
10	North Great Sandhills	49.2	1.64	2.30	2.95	2.27 (5.89)
10	Elkinks	41.4	0.87	--	4.20	4.10 (10.62)
11	Burstall	41.4	--	--	2.34	-- --
12	Cabri Sandhills (new survey)	36.3	--	--	--	2.54 (6.57)
GRASSLAND		284.8	0.96	1.64	2.86	3.02 (7.84) +6%*
15	Goodwater	46.6	2.18	3.17	5.47	4.25 (11.00)
16	Wellington	44.0	--	3.79	2.88	3.81 (9.88)
17	Strawberry Lakes	41.4	0.91	1.66	1.64	1.37 (3.56)
19	Mortlach	49.2	1.97	1.62	2.57	3.13 (8.10)
19	Val Jean	49.2	3.72	4.39	7.46	8.51 (22.05)
20	Bethune	62.0	0.68	0.81	0.88	0.90 (2.33)
21	Gibbs	41.4	1.03	1.28	1.57	1.86 (4.81)
21	Last Mountain Lake	38.8	0.64	1.59	1.90	1.85 (4.80)
22	Bradwell	62.2	0.75	0.82	1.32	1.19 (3.08)
23	Elbow	41.4	2.22	2.80	3.64	2.61 (6.75)
26	Alsask	49.2	1.46	2.50	3.23	2.24 (5.79)
28	Duperow	36.3	--	4.96	4.61	5.65 (14.64)
29	Goose Lake		1.08	1.52	2.03	-- --
30	Asquith	31.1	0.90	1.22	1.42	1.61 (4.17)
FARMLAND		592.8	1.47	2.22	2.88	2.63 (6.82) -9%*
31	Coalfields	43.4	--	--	2.74	2.95 (7.64)
33	Tecumseh	51.8	1.66	2.90	4.42	4.21 (10.90)
34	Moosomin South		0.63	1.29	0.89	-- --
38	Fort Block		1.00	1.32	1.75	-- --
39	Goodspirit	41.4	--	2.05	2.29	1.70 (4.38)
40	Quill Lakes	41.4	0.89	0.87	1.08	1.39 (3.44)
45	Aroma Lake	46.6	1.03	--	0.90	0.62 (1.61)
PARKLAND		225.6	1.02	1.66	1.96	2.22 (5.76) +13%*
PROVINCE (28 survey blocks)		1102.2 km^2	1.24	1.97	2.63	2.65 (6.86) No change

* Percent difference in 1988 male sharptail density figures compared to 1987; based on comparable survey blocks only.

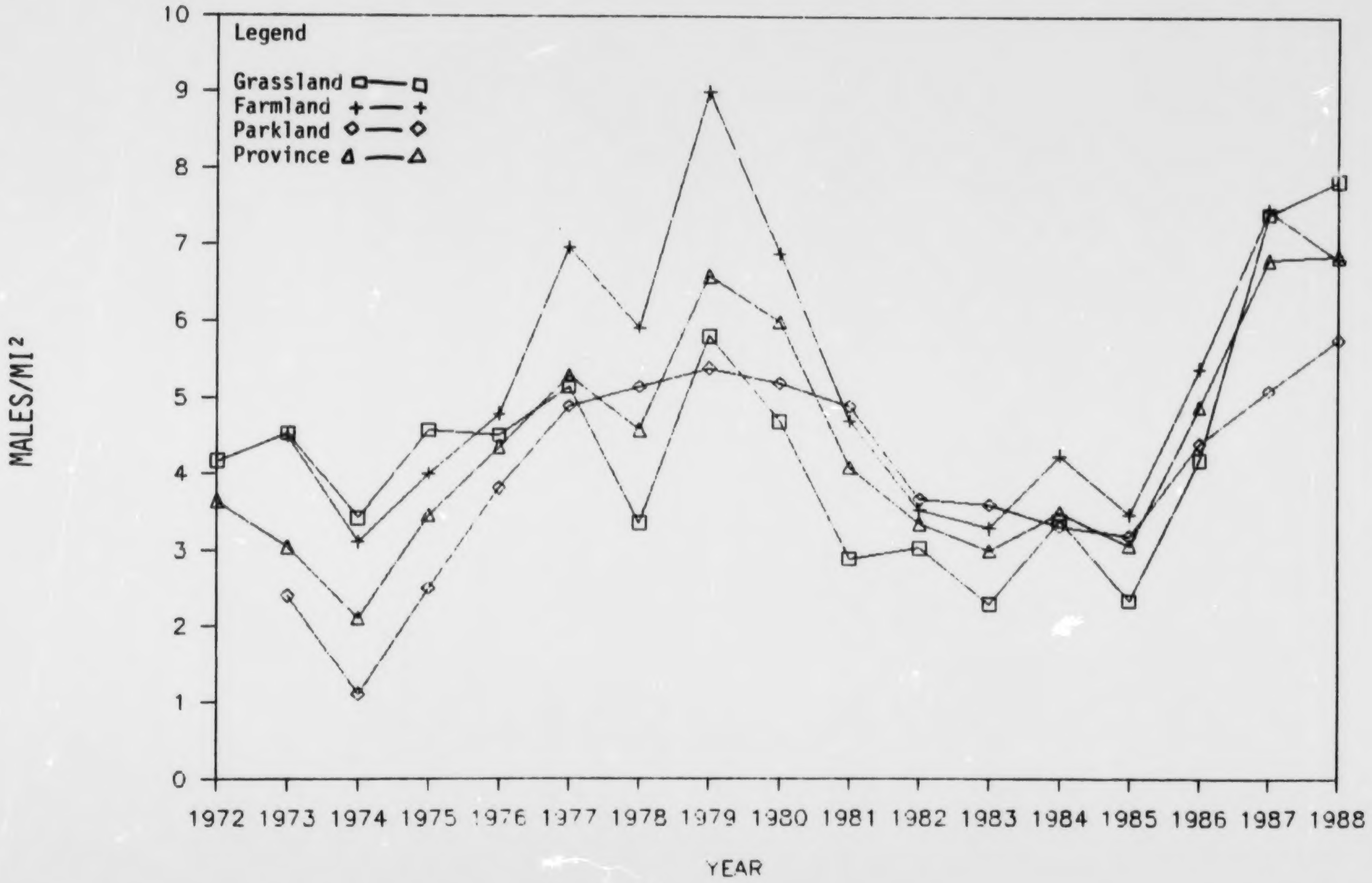

Figure 20. Sharp-tailed Grouse Breeding Population Trends, 1972-1988

Discussion - Sharp-tailed Grouse 1988

The provincial sharptail population showed good brood production during the summers of 1985 and 1986 but below average reproduction in 1987. Spring surveys in 1988 have also shown an increase in the number of breeding males in 11 of the 24 comparable survey blocks. The provincial breeding index is essentially similar to that observed in 1987.

Nesting success and brood survival in 1988 is expected to be below that of 1987, since drought conditions in the Grasslands will result in less nesting cover and slightly higher predation rates.

Habitat loss due to breaking of native grassland for cereal cropping and tame forage will continue to negatively impact sharp-tailed grouse populations in the future. However, present population conditions on intact habitat areas are felt to be good.

The 1988 season will maintain the bag limit for sharp-tailed grouse at 5 birds/day in the Grasslands, parts of the Farmlands and the southeastern portion of the Parklands. Populations remain at adequate levels to maintain the traditional opening of southern zones one week earlier (similar to 1986 and 1987). A September 21, 1988 opening will also coincide with the proposed opening date for Hungarian Partridge and Ruffed Grouse in southern zones. Bag limits of 3 birds/day are proposed in WMZ 20-22, 30 and 34 to 47 due to the proximity of these zones to urban hunters, lower breeding numbers or lower reproduction in 1987. Bag limits of 3 birds/day similar to 1987 are also proposed for the Forest Fringe, Forest and Northern Shield.

1988 Sharp-tailed Grouse Hunting Regulations*

WMZ Open	Season Dates (Inclusive)	Bag Limit
WMZ 1 to 19, 23 to 29, 31 to 33; and starting Oct. 5, Elbow, Estevan-Cambria and Lomond #3 Wildlife Management Units	Sept. 21 - Nov. 19	5 daily 10 possession
WMZ 20 to 22, 30 and 34 to 47, including Last Mountain Lake Wildlife Management Unit	Sept. 21 - Nov. 19	3 daily 6 possession
WMZ 48 to 76 including Clear-Water River, Lac La Ronge, Meadow Lake and Nipawin Provincial Parks; Fort a la Corne Wildlife Management Unit and Bronson Forest Recreation site	Sept. 7 - Dec. 3	3 daily 6 possession

* Non-residents of Canada may not hunt sharp-tailed grouse in WMZ 9-14 and 25-28.

HUNGARIAN PARTRIDGE

1987 Hunting Activity and Harvest

For the fifth consecutive year, the reported Hungarian partridge harvest surpassed the sharp-tailed grouse harvest (Figure 14; Appendix 20). A total of 103,903 partridge was harvested in the fall of 1987 which is 60% above the 1972-86 average (Tables 96, 97). The number of active partridge hunters decreased by 13% to 15,700 but the harvest increased to 6.6 birds/active hunter which is almost double the 14-year average and the highest level in 16 years. Partridge hunter success rose to 3.86 birds/species hunter day from the 3.67 recorded in 1986. The chronology and distribution of the harvest are illustrated in Figures 19 and 20, respectively. Thirty-one percent (31%) of the harvest occurred during the first two weeks of the 1987 season.

Harvest pressure (partridge harvested/km^2) increased in the Grasslands (0.43 to 0.57), Farmlands (0.61 to 0.63) and Forest Fringe (0.01 to 0.03) (Table 98). The Farmland zones continued to contribute a high proportion of the total harvest (55% compared to 60% in 1986). Hunter success (harvest/species hunter day) was highest in the Grasslands with 4.09 birds/hunter day versus 3.88 birds/day in the Farmlands and 3.10 birds/day in the Parklands (Table 98).

The five top 1987 partridge zones (Table 99) accounted for 43% of the provincial harvest. WMZ 5, 15 and 19 ranked in the top 5 for the fourth consecutive year.

1987 Hungarian Partridge Reproduction

Provincially the 1987 production index (estimated by analysis of wing samples from the harvest) was 3.10 young/adult, which is 44% below the 1986 index of 5.50 (Table 100, Appendix 21) and near the long term average (Appendix 22). The Grassland index decreased by 28% to 3.66 from 5.07 in 1986. The 1987 Farmland index of 2.73 is 22% below the 1975-86 average of 3.52 young/adult and 52% lower than the 1986 estimate. The Parkland index of 5.44 was derived from a small sample size (58 wings) and as a result may exaggerate the actual 1987 reproduction in this ecological division. (However, sample sizes of more than 50 wings should be statistically reliable.)

Table 96. Hungarian Partridge Hunting Data for Saskatchewan*, 1972-1987

	Hunting Level			Hunting Success		
Year	Active Hungarian Partridge Hunters	Upland Bird Hunter Days Zones 1-22 (1972-83) Zones 1-55 (1984-87)	Upland Hunter Days/Active Partridge Hunter	Hungarian Partridge Harvest	Partridge Harvest/ Active Hunter	Partridge Harvest/ Upland Hunter Day
1972	23,360	49,692	2.1	77,093	3.3	1.55
1973	20,741	50,827	2.5	74,668	3.6	1.47
1974**	15,276	33,722	2.2	33,608	2.2	1.00
1975**	17,356	39,353	2.3	45,125	2.6	1.15
1976**	22,835	73,458	3.2	90,897	4.0	1.24
1977**	25,535	78,289	3.1	93,616	3.7	1.20
1978	21,320	58,514	2.7	60,585	2.8	1.04
1979	21,041	59,801	2.8	69,127	3.3	1.16
1980	20,698	61,856	3.0	66,349	3.2	1.07
1981	19,617	57,149	2.9	64,349	3.3	1.13
1982	17,056	43,995	2.6	41,743	2.4	0.95
1983	19,014	54,452	2.9	61,073	3.2	1.12
1984	15,511	42,219	2.7	59,794	3.9	1.42
1985	12,867	36,889	2.9	41,998	3.3	1.14
1986	17,964	65,911	3.7	92,270	5.1	1.40
1972-1986 Average	19,346	53,742	2.8	64,819	3.4	1.21
1987	15,699	71,400	4.5	103,903	6.6	1.46
% Change						
1987 from 1986	-13%	+8%	+24%	+13%	+29%	+4%
1987 from Average	-19%	+33%	+60%	+60%	+94%	+12%

* Forest and Shield Division excluded from data because of insignificance to Hungarian partridge hunting. (No open season in WMZ 56-77)

**Inaccurate data were published for these years prior to 1979 corrections.

Table 97. Hungarian partridge harvest and hunting pressure by Wildlife Management Zone 1987.

WMZ	Total Kill	% of Harvest	Active Hunters per WMZ	Kill per sq.Km.	Kill per Day	Total Hunter Days	Species Hunter Days
1	5,528	5.32	660	0.664	2.6	2,106	1,052
2	6,015	5.78	982	0.565	1.6	3,689	1,425
3	171	0.16	64	0.040	2.2	78	38
4	8,747	8.41	1,613	1.077	1.7	5,280	2,338
5	5,515	5.30	932	0.924	2.0	2,763	1,207
6	647	0.62	179	0.154	1.7	387	173
7	141	0.14	72	0.074	0.9	161	49
8	819	0.79	142	0.241	2.6	314	161
9	2,408	2.31	585	0.701	1.8	1,333	621
10	2,535	2.44	576	0.715	1.5	1,662	683
11	488	0.47	133	0.495	1.0	488	132
12	180	0.17	125	0.524	1.0	173	73
13	2,568	2.47	596	0.629	1.9	1,349	645
14	1,433	1.38	655	0.257	1.1	1,307	506
GR	37,195	35.76	7,313	0.574	1.8	21,090	9,104
15	13,407	12.89	1,611	1.994	2.0	6,679	2,891
16	2,888	2.78	589	0.544	2.4	1,209	685
17	2,455	2.36	867	0.642	1.4	1,729	823
18	6,043	5.81	1,069	0.811	2.4	2,568	1,424
19	14,700	14.13	2,037	1.594	2.2	6,616	3,438
20	1,913	1.84	592	0.346	1.8	1,066	521
21	3,977	3.82	1,332	0.474	1.2	3,425	1,433
22	1,598	1.54	405	0.338	1.9	839	400
23	2,470	2.37	683	0.430	1.7	1,440	730
24	2,614	2.51	650	0.541	1.6	1,609	804
25	882	0.85	345	0.152	1.5	577	286
26	706	0.68	289	0.160	1.8	401	214
27	278	0.27	149	0.056	1.6	171	95
28	233	0.22	110	0.172	1.6	146	72
29	2,457	2.36	768	0.461	1.4	1,726	743
30	940	0.90	571	0.130	0.9	1,025	287
FA	57,558	55.34	12,068	0.634	1.8	31,225	14,845
31	2,276	2.19	282	0.903	2.0	1,131	592
32	396	0.38	156	0.142	2.0	202	106
33	876	0.84	343	0.226	0.7	1,246	262
34	314	0.30	187	0.058	0.8	420	101
35	224	0.22	130	0.086	0.5	423	80
36	537	0.52	298	0.104	0.9	625	182
37	477	0.46	305	0.042	0.4	1,135	153
38	435	0.42	274	0.068	0.7	593	154
39	121	0.12	116	0.016	0.2	714	41
40	390	0.37	208	0.072	0.5	768	124
41	526	0.51	251	0.073	1.1	472	140
42	303	0.29	205	0.041	0.3	1,135	141
43	174	0.17	136	0.026	0.2	901	57
44	451	0.43	304	0.099	0.6	782	198
45	527	0.51	350	0.069	0.6	866	218
46	98	0.09	109	0.016	0.4	242	61
47	291	0.28	142	0.051	0.4	817	104
PA	8,415	8.09	3,796	0.085	0.7	12,472	2,714
48	149	0.14	44	0.059	0.3	475	44
49	98	0.09	26	0.041	0.3	336	24
50	112	0.11	75	0.034	0.1	1,236	44
51	37	0.04	56	0.013	0.1	447	19
52	206	0.20	154	0.071	0.3	736	61
53	44	0.04	44	0.016	0.1	883	16
54	189	0.18	141	0.033	0.1	1,511	78
55	12	0.01	31	0.003	0.0	990	3
FF	847	0.81	569	0.032	0.1	6,613	287
56	0	0.00	0	0.000	0.0	1,621	0
57	0	0.00	0	0.000	0.0	534	0
58	0	0.00	0	0.000	0.0	252	0
59	0	0.00	0	0.000	0.0	707	0
60	0	0.00	0	0.000	0.0	438	0
61	0	0.00	0	0.000	0.0	105	0
62	0	0.00	0	0.000	0.0	750	0
63	0	0.00	0	0.000	0.0	1,339	0
64	0	0.00	0	0.000	0.0	593	0
65	0	0.00	0	0.000	0.0	345	0
66	0	0.00	0	0.000	0.0	662	0
67	0	0.00	0	0.000	0.0	2,221	0
68	0	0.00	0	0.000	0.0	780	0
69	0	0.00	0	0.000	0.0	617	0
70	0	0.00	0	0.000	0.0	203	0
71	0	0.00	0	0.000	0.0	114	0
72	0	0.00	0	0.000	0.0	124	0
73	0	0.00	0	0.000	0.0	168	0
FO	0	0.00	0	0.000	0.0	11,574	0
74	0	0.00	0	0.000	0.0	50	0
75	0	0.00	0	0.000	0.0	9	0
76	0	0.00	0	0.000	0.0	16	0
NS	0	0.00	0	0.000	0.0	75	0
TOTAL	104,015	100.00	23,747	0.166	1.3	83,049	26,950

* Hunter Days are based on all Upland Hunting.

* The Total Active Hunter value is NOT the true Provincial Total.

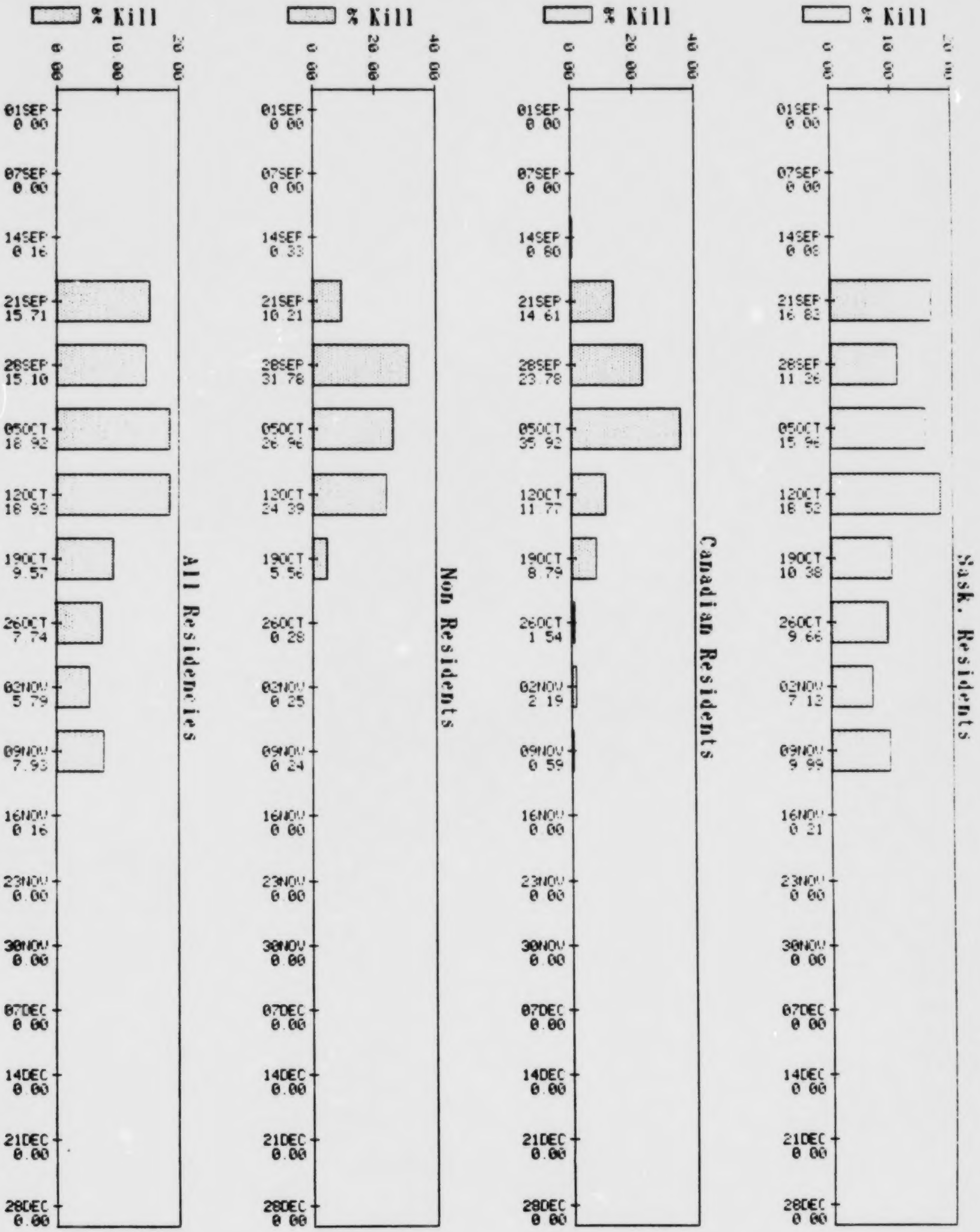

Figure 21. Saskatchewan 1987 Hungarian partridge harvest by weekly intervals.

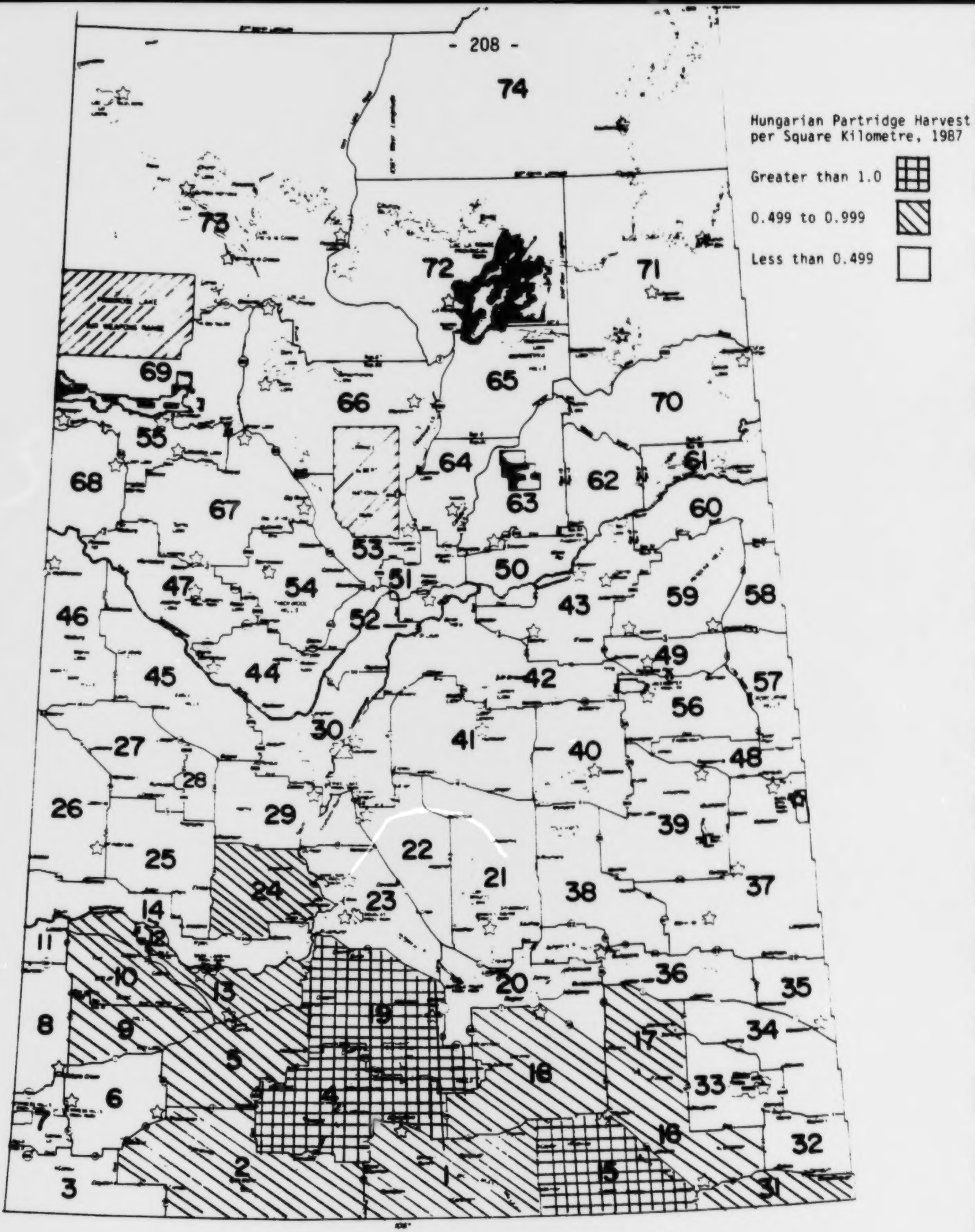
Hungarian Partridge Harvest per Square Kilometre, 1987
Greater than 1.0 ▦
0.499 to 0.999 ▨
Less than 0.499 ☐
74
73
72
71
69
66
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Figure 22. Saskatchewan Hungarian Partridge Harvest Density, 1987

Table 98. Hungarian Partridge Hunting Data for Saskatchewan by Ecological Division, 1987 vs 1986

	Grassland Zones 1-14		Farmland Zones 15-30		Parkland Zones 31-47		Forest Fringe Zones 48-55		Province*	
	1987	1986	1987	1986	1987	1986	1987	1986	1987	1986
Harvest (% of Total)	37,195 35.8	28,029 30.4	52,558 55.3	55,094 59.8	8,415 8.1	8,723 9.5	847 0.81	323 0.35	104,015 100%	92,169 100%
Harvest Pressure (kill/sq km)	0.574	0.433	0.634	0.607	0.085	0.089	0.032	0.012	0.371*	0.329*
Upland Bird Hunter Days (% of Total)	21,090 29.5	16,844 25.6	31,225 43.7	32,943 50.0	12,472 17.5	12,277 18.6	6,613 9.3	4,297 6.5	71,400* 100%	65,911* 100%
Species Hunter Days (% of Total)	9,104 33.8	6,925 27.6	14,845 55.1	15,200 60.6	2,714 10.1	2,845 11.3	287 1.1	125 0.5	26,950 100%	25,095 100%
Hunting Pressure (Upland Hunter Days/ sq km)	0.325	0.260	0.344	0.363	0.127	0.125	0.252	0.164	0.255	0.235
Hunter Success (Kill/Upland Hunter Day)	1.76	1.66	1.84	1.67	0.67	0.71	0.128	.075	1.46	1.40
Hunter Success (Kill/Species Hunter Day)	4.09	4.05	3.88	3.62	3.10	3.07	2.95	2.58	3.86	3.67

*Forest and Northern Shield Divisions excluded from hunter days and area (km^2) calculations; Hungarian Partridge are essentially absent from these areas and partridge hunting is not permitted in Zones 56-76.

Table 99. Five Important Hungarian Partridge Harvest Zones in Saskatchewan, 1985-1987

	1985			1986			1987		
Rank*	Wildlife Mgmt. Zone	Partridge Harvest/ km²	% of Provincial Harvest	Wildlife Mgmt. Zone	Partridge Harvest/ km²	% of Provincial Harvest	Wildlife Mgmt. Zone	Partridge Harvest/ km²	% of Provincial Harvest
1st	19	0.604	13.27	15	1.820	13.28	15	1.994	12.89
2nd	15	0.570	9.13	19	1.405	14.05	19	1.594	14.13
3rd	5	0.528	7.50	31	1.164	3.18	4	1.077	8.41
4th	4	0.515	9.95	12	1.018	0.38	5	0.924	5.30
5th	9	0.425	3.48	5	0.882	5.71	31	0.903	2.19
Total	Leading 5 Zones	0.540	43.33	Leading 5 Zones	1.360	36.60	Leading 5 Zones	1.37	42.92

*Zones ranked according to harvest density based on zone area (km²)

Table 100. Hungarian Partridge Reproduction in Saskatchewan, 1982-1987
(Based on wing samples from harvest)

	(Juveniles/Adult in Harvest)							% Change	
Wildlife Management Division	1982	1983	1984	1985	1986	1975-86 Average	1987	1987 from 1986	1987 from Average (1975-1986)
Grassland	5.00*	2.38	2.13	3.40	5.07	2.94	3.66	-28%	+24%
Farmland	2.86	3.46	3.42	3.88	5.70	3.52	2.73	-52%	-22%
Parkland	3.50*	6.00*	3.10	3.67*	6.40*	3.84	5.44	-15%	+42%
Province	2.99	3.21	2.67	3.60	5.50	3.21 3.00**	3.10	-44%	-3% +3%**

* Sample less than 50 wings
**1957-1983 Average

Age ratio data from Hungarian partridge wing samples have been collected since 1957. The 1986 index of 5.50 was the best reproduction recorded to date with the previous high being 5.29 young per adult recorded in 1962. 1987 reproduction fell below these record levels but remained above average in the Grasslands and Parklands.

1988 Hungarian Partridge Breeding Population

Spring surveys of 337 abandoned farmsteads show a provincial index of 1.77 pair of partridge/farmstead (Table 101), up by 75% in relation to 1987 surveys and the highest density estimate since breeding surveys were initiated. The above-average reproduction in 1985 and 1986 in the Grasslands, Farmlands and Parklands, and two consecutive mild winters are believed to have produced the partridge population increases we are presently witnessing throughout their range in this province.

Summary

The record 1987 harvest and the 1988 spring counts give cause for optimism. Continuation of the 10 bird daily bag limit is warranted in similar zones in 1988 due to high populations in these zones. WMZ 35 to 41 can also withstand a bag limit increase from 3 to 5 birds per day. In addition, a late Hungarian partridge season will run coincidentally with the late pheasant season.

Hungarian partridge hunting success and harvest increased significantly in 1987 and rose above the 14-year average. It is felt that this increase was mainly due to increased hunter activity (days) and increased populations in the Grasslands, Farmlands and Parklands. The continued improvement of populations should produce another banner year for partridge hunters in 1988.

Table 101. Hungarian Partridge Breeding Population Surveys, Spring 1988

Wildlife Management Zone	Pairs/Farmstead 1985	1986	1987	Number of Farmsteads Surveyed 1988	1988 Pairs/ Farmstead
1	0.80	1.50	2.00	14	2.14
2	--	--	1.30	29	2.72
4	1.03	0.80	1.71	41	2.76
5	--	--	2.00	20	3.90
9	0.67	0.67	0.78	15	2.20
10	0.63	0.27	0.38	16	1.25
13	--	--	0.73	11	1.36
14	--	0.33	1.42	18	1.11
GRASSLAND	0.84	0.76	1.31	164	2.41 +80%*
15	0.21	0.53	0.95	19	2.32
16	--	--	--	20	1.25
17	--	--	0.86	5	0.60
18	0.22	0.90	0.63	19	0.53
19	0.50	0.50	1.40	14	2.50
21	0.10	0.25	0.45	20	0.90
23	0.40	0.55	0.95	19	1.95
24	0.15	0.45	1.00	10	1.40
25	0.26	0.27	0.69	10	0.60
26	0.20	0.40	0.40	10	0.70
28	--	--	0.20	15	0.33
29	--	0.42	1.08	12	1.00
FARMLAND	0.24	0.43	0.80	153	1.25 +58%*
31	--	0.82	0.85	20	1.00
PROVINCE	0.41	0.57	1.03	337	1.77 +75%*

*Percent difference in 1988 density figures compared to 1987, based on surveys done in comparable zones.

1988 Hunting Regulations - Hungarian Partridge*

WMZ Open	(Inclusive)	Bag Limit
WMZ 1 to 19, 22 to 24, 29, and 31; and starting Oct. 5, Elbow, Estevan-Cambria and Lomond #3 Wildlife Management Units	Sept 21 - Nov 19	10 daily 20 possession
WMZ 20, 21, 25 to 28, 30, and 32 to 41, including Last Mountain Lake Wildlife Management Unit	Sept 21 - Nov 19	5 daily 10 possession
WMZ 42 to 55, including Fort a la Corne Wildlife Management Unit	Sept 21 - Nov 19	3 daily 6 possession
Special Late Hungarian Partridge		
WMZ 1 to 19, 24 and 31, including Estevan-Cambria and Lomond Wildlife Management Units	Dec 5 - Dec 21	10 daily 20 possession

* Non-residents of Canada may not hunt Hungarian partridge in WMZ 9-14 and 25-28.

PHEASANT

1987 Hunting Activity and Harvest

An estimated 5,523 Saskatchewan pheasant hunters participated in the 1987 pheasant season compared to 4,770 in 1986 (Table 102; Appendix 23). The traditional late season was reinstated in 1987 and accounted for 13.6% of the pheasant harvest. Active pheasant hunters harvested 16,439 cock pheasants which is 40% above the 11-year average (Tables 102 and 103; Figure 21). Active hunters increased by 16% and pheasant hunter days by 44% from 1986 levels. Hunting success in terms of cocks harvested per hunter day increased to 2.29 birds/day which is 23% above the 11-year average of 1.86 (Table 102).

WMZ 15 and 4 were again the most important pheasant hunting areas (Table 104; Figure 22) providing half the provincial harvest and pheasant hunter recreation days. WMZ 2 and 5 contributed 31% of the harvest. Hunter success was virtually equal in these 4 zones with 2.26 to 2.46 cocks harvested/species hunter day. About 32% of the total harvest occurred during the opening week (October 7-13) compared to 44% in 1984, 33% in 1985 and 31% in 1986 (Figure 23).

1988 Breeding Populations - Pheasant

The winters of 1986-87 and 1987-88 were two of the mildest on record and snowfall was below normal throughout the prime pheasant range. 1988 population levels have stabilized in the Grasslands and increased in WMZ 15. The provincial spring breeding index has increased 10% to 5.33 crows heard per survey stop (Table 105, Figure 24). The 1988 index represents a doubling of the cock pheasant population in relation to the 1984 survey. Seven of the 14 survey areas show increases in the number of breeding males over 1987 figures, while 6 routes show decreases. Grass and shrub cover along drainages is somewhat below average condition due to drought conditions in 1987 and 1988. This decrease in habitat quality will afford less nest cover for breeding hens to that experienced in 1987.

Table 102. Pheasant Hunting Data for Saskatchewan*, 1976-1987

	Hunting Level			Hunting Success		
Year	Active Pheasant Hunters	Pheasant Hunter Days	Pheasant Hunter Days/ Active Hunter	Pheasant Harvest	Pheasants Harvested/ Active Pheasant Hunter	Pheasants Harvested/ Pheasant Hunter Day
1976	4,619	7,421	1.6	14,488	3.1	1.95
1977	5,726	9,718	1.7	19,097	3.3	2.05
1978	4,476	6,107	1.4	10,165	2.3	1.66
1979	3,441	4,390	1.3	7,060	2.1	1.61
1980	4,150	5,876	1.4	11,823	2.8	2.01
1981	4,825	7,052	1.5	12,536	2.6	1.78
1982	3,915	5,772	1.5	7,511	1.9	1.30
1983	6,348	9,313	1.5	15,857	2.5	1.70
1984	4,975	4,870	1.0	12,182	2.4	2.50
1985	3,704	3,325	0.9	7,084	1.9	2.13
1986	4,767	4,991	1.0	10,557	2.2	2.12
1976-1986 Average	4,632	6,257	1.4	11,669	2.5	1.86
1987	5,523	7,178	1.3	16,439	3.0	2.29
% Change						
1987 from 1986	+16%	+44%	+24%	+56%	+34%	+8%
1987 from Average	+19%	+15%	-4%	+41%	+18%	+23%

*Includes only Wildlife Management Zones 1 to 36 (1984-1987) as these are only zones in which a pheasant season is currently held.

Table 103. Saskatchewan pheasant harvest and hunting pressure by Wildlife Management Zone, 1987.

WMZ	Total Kill	% of Harvest	Active Hunters per WMZ	Kill per sq.Km.	Kill per Day	Total Hunter Days	Species Hunter Days
1	447	2.72	232	0.054	0.2	2,106	178
2	2,704	16.47	964	0.254	0.7	3,689	1,149
3	25	0.15	31	0.006	0.3	78	12
4	4,536	27.63	1,656	0.559	0.9	5,280	1,938
5	2,391	14.56	830	0.401	0.9	2,763	970
6	97	0.59	98	0.023	0.3	387	48
7	159	0.97	73	0.084	1.0	161	57
8	91	0.55	48	0.027	0.3	314	32
9	29	0.18	61	0.008	0.0	1,333	23
10	66	0.40	86	0.019	0.0	1,662	32
11	279	1.70	183	0.283	0.6	488	144
12	25	0.15	31	0.072	0.1	173	12
13	323	1.96	189	0.079	0.2	1,349	156
14	577	3.51	440	0.103	0.4	1,307	306
GR	11,748	71.55	4,923	0.181	0.6	21,090	5,059
15	3,829	23.32	1,216	0.569	0.6	6,679	1,691
16	110	0.67	86	0.021	0.1	1,209	45
17	23	0.14	55	0.006	0.0	1,729	11
18	242	1.47	226	0.032	0.1	2,568	128
19	273	1.66	232	0.030	0.0	6,616	131
20	35	0.21	48	0.006	0.0	1,066	20
21	6	0.04	19	0.001	0.0	3,425	6
22	0	0.00	0	0.000	0.0	839	0
23	6	0.04	19	0.001	0.0	1,440	3
24	79	0.48	55	0.016	0.1	1,609	35
25	6	0.04	25	0.001	0.0	577	6
26	6	0.04	12	0.001	0.0	401	3
27	0	0.00	25	0.000	0.0	171	0
28	0	0.00	0	0.000	0.0	146	0
29	0	0.00	6	0.000	0.0	1,726	0
30	6	0.04	6	0.001	0.0	1,025	3
FA	4,620	28.14	2,030	0.051	0.2	31,225	2,083
31	35	0.21	73	0.014	0.0	1,131	17
32	0	0.00	12	0.000	0.0	202	0
33	0	0.00	6	0.000	0.0	1,246	0
34	6	0.04	6	0.001	0.0	420	3
35	10	0.06	42	0.004	0.0	423	4
36	0	0.00	19	0.000	0.0	625	0
37	0	0.00	0	0.000	0.0	1,135	0
38	0	0.00	0	0.000	0.0	593	0
39	0	0.00	0	0.000	0.0	714	0
40	0	0.00	0	0.000	0.0	768	0
41	0	0.00	0	0.000	0.0	472	0
42	0	0.00	0	0.000	0.0	1,135	0
43	0	0.00	0	0.000	0.0	901	0
44	0	0.00	0	0.000	0.0	782	0
45	0	0.00	0	0.000	0.0	866	0
46	0	0.00	0	0.000	0.0	242	0
47	0	0.00	0	0.000	0.0	817	0
PA	51	0.31	159	0.001	0.0	12,472	24
48	0	0.00	0	0.000	0.0	475	0
49	0	0.00	0	0.000	0.0	336	0
50	0	0.00	0	0.000	0.0	1,236	0
51	0	0.00	0	0.000	0.0	447	0
52	0	0.00	0	0.000	0.0	736	0
53	0	0.00	0	0.000	0.0	883	0
54	0	0.00	0	0.000	0.0	1,511	0
55	0	0.00	0	0.000	0.0	990	0
FF	0	0.00	0	0.000	0.0	6,613	0
56	0	0.00	0	0.000	0.0	1,621	0
57	0	0.00	0	0.000	0.0	534	0
58	0	0.00	0	0.000	0.0	252	0
59	0	0.00	0	0.000	0.0	707	0
60	0	0.00	0	0.000	0.0	438	0
61	0	0.00	0	0.000	0.0	105	0
62	0	0.00	0	0.000	0.0	750	0
63	0	0.00	0	0.000	0.0	1,339	0
64	0	0.00	0	0.000	0.0	593	0
65	0	0.00	0	0.000	0.0	345	0
66	0	0.00	0	0.000	0.0	662	0
67	0	0.00	0	0.000	0.0	2,221	0
68	0	0.00	0	0.000	0.0	780	0
69	0	0.00	0	0.000	0.0	617	0
70	0	0.00	0	0.000	0.0	203	0
71	0	0.00	0	0.000	0.0	114	0
72	0	0.00	0	0.000	0.0	124	0
73	0	0.00	0	0.000	0.0	168	0
FO	0	0.00	0	0.000	0.0	11,574	0
74	0	0.00	0	0.000	0.0	50	0
75	0	0.00	0	0.000	0.0	9	0
76	0	0.00	0	0.000	0.0	16	0
NS	0	0.00	0	0.000	0.0	75	0
>>>>>>>>>>>>>>>>>>>> T O T A L >>>>>>>>>>>>>>>>>>>>	16,419	100.00	7,112	0.026	0.2	83,049	7,166

* Hunter Days are based on all Upland Hunting.

* The Total Active Hunter value is NOT the true Provincial Total.

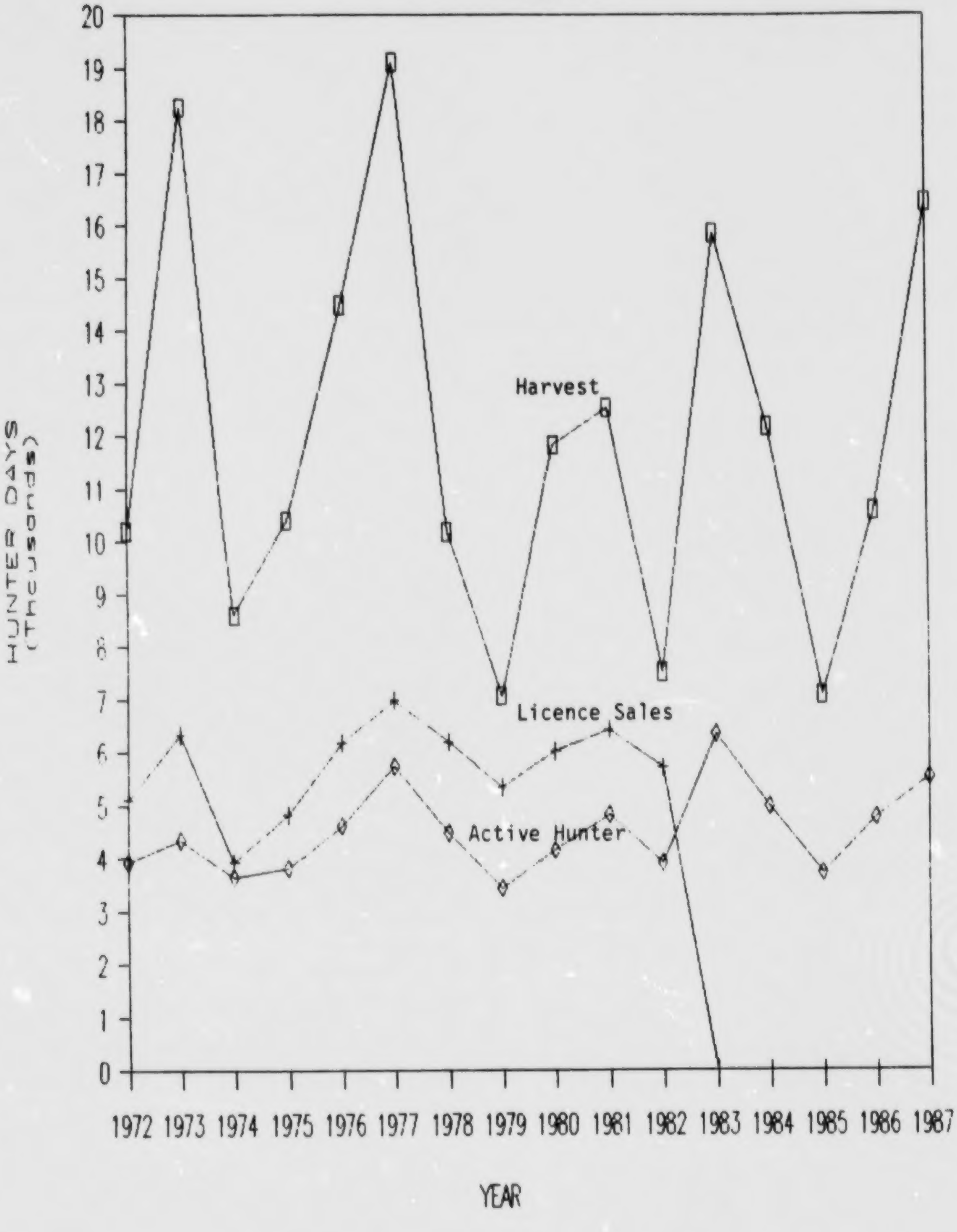

Figure 23. Saskatchewan Pheasant Licence Sales, Active Hunters and Harvest, 1972-1987

Table 104. Four Important Pheasant Hunting Zones in Saskatchewan*, 1985-1987

	Zone 4			Zone 2			Zone 5			Zone 15			Total (4 Zones)			Province*		
	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987	1985	1986	1987
Harvest **(% of Total)**	1,860 26%	2,439 23.1%	4,536 27.6%	875 12%	1,250 11.8%	2,704 16.5%	1,032 14.6%	1,619 15.4%	2,391 14.6%	1,978 28%	2,801 26.5%	3,829 23.3%	5,745 81%	8,109 76.8%	13,460 82%	7,084 100%	10,552 100%	16,419 100%
Harvest Pressure (kill/sq km)	.229	.301	.559	.082	.117	.234	.173	.271	.401	.294	.416	.569	.18	.257	.428	.04	.059	.092
Pheasant Hunter Days **(% of Total)**	867 26%	1,158 23.2%	1,938 27%	406 12%	582 11.7%	1,149 16%	504 15%	763 15.3%	970 13.5%	922 28%	1,325 26.6%	1,691 23.6%	2,699 81%	3,828 76.7%	5,748 80.2%	3,325 100%	4,989 100%	7,166 100%
Hunting Pressure (Pheasant hunter days/ sq km)	.11	.14	.24	.04	.05	.11	.08	.13	.16	.14	.20	.25	.09	.12	.18	.02	.03	.04
Hunter Success (kill/pheasant hunter day)	2.15	2.11	2.34	2.16	2.15	2.35	2.05	2.12	2.46	2.15	2.11	2.26	2.13	2.12	2.34	2.13	2.12	2.29

*Includes only Zones 1-36 as these are only ones in which a pheasant hunting season is held

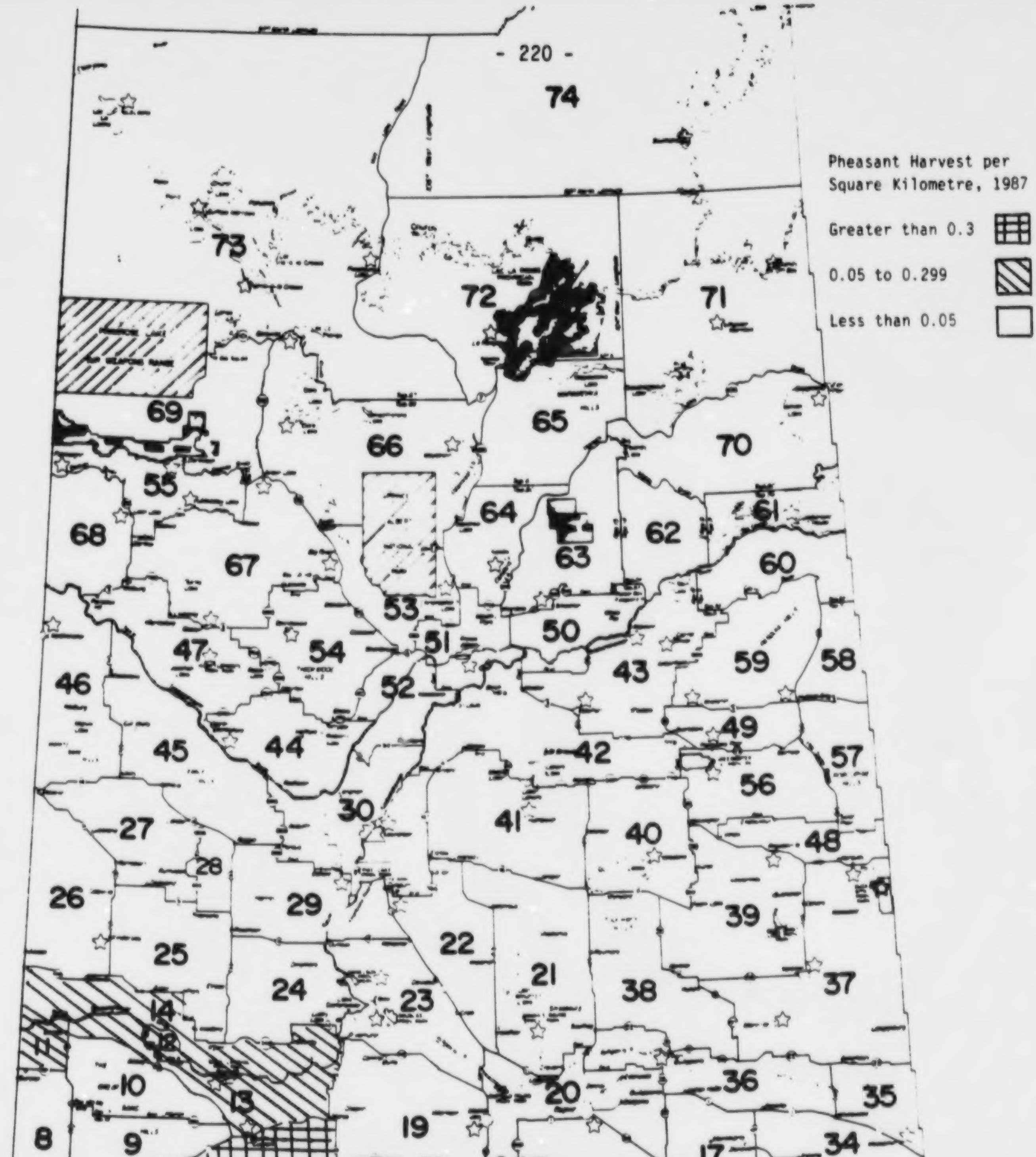
Pheasant Harvest per Square Kilometre, 1987
Greater than 0.3 ▦
0.05 to 0.299 ▨
Less than 0.05 ☐
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Figure 24. Saskatchewan Cock Pheasant Harvest Density, 1987

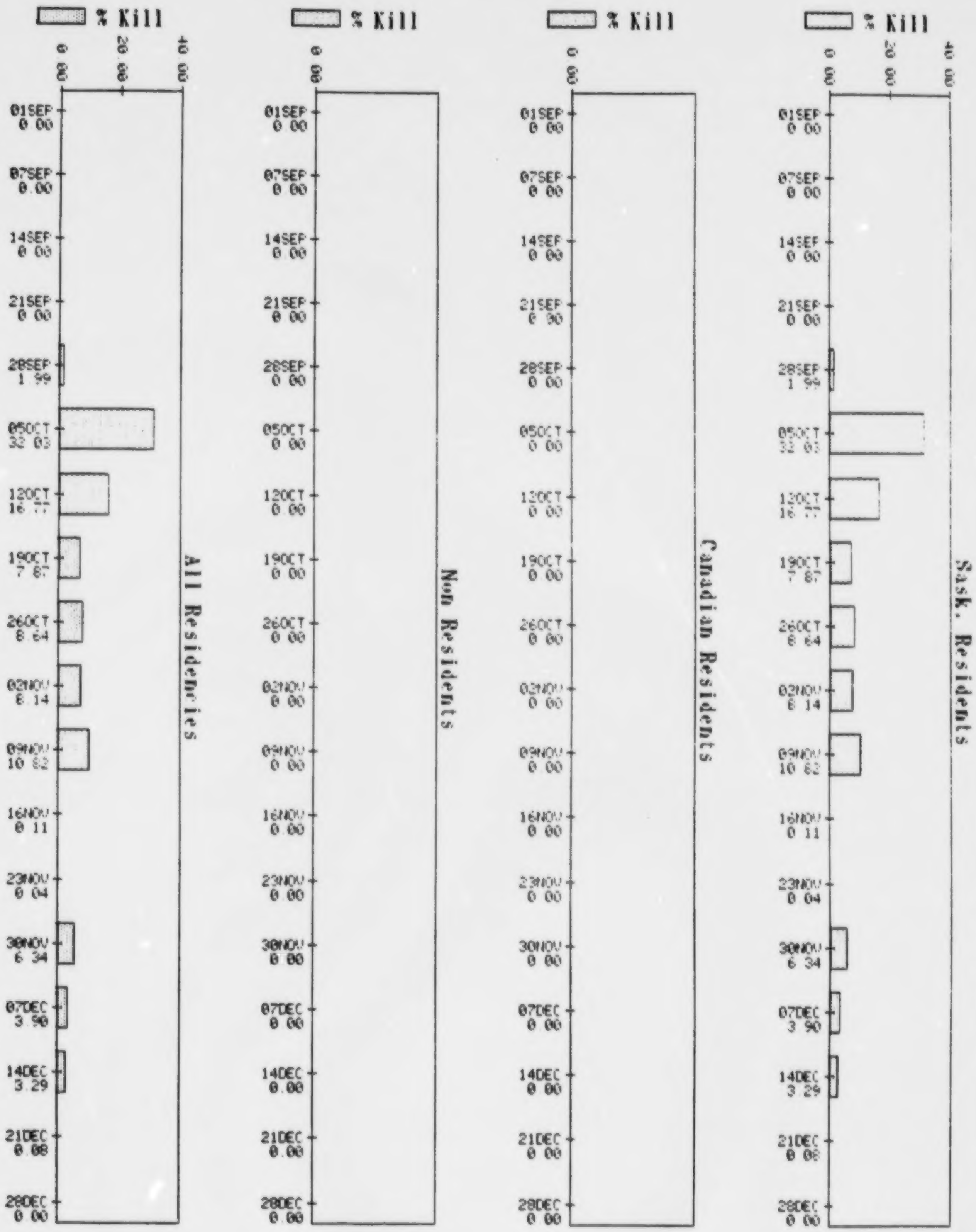
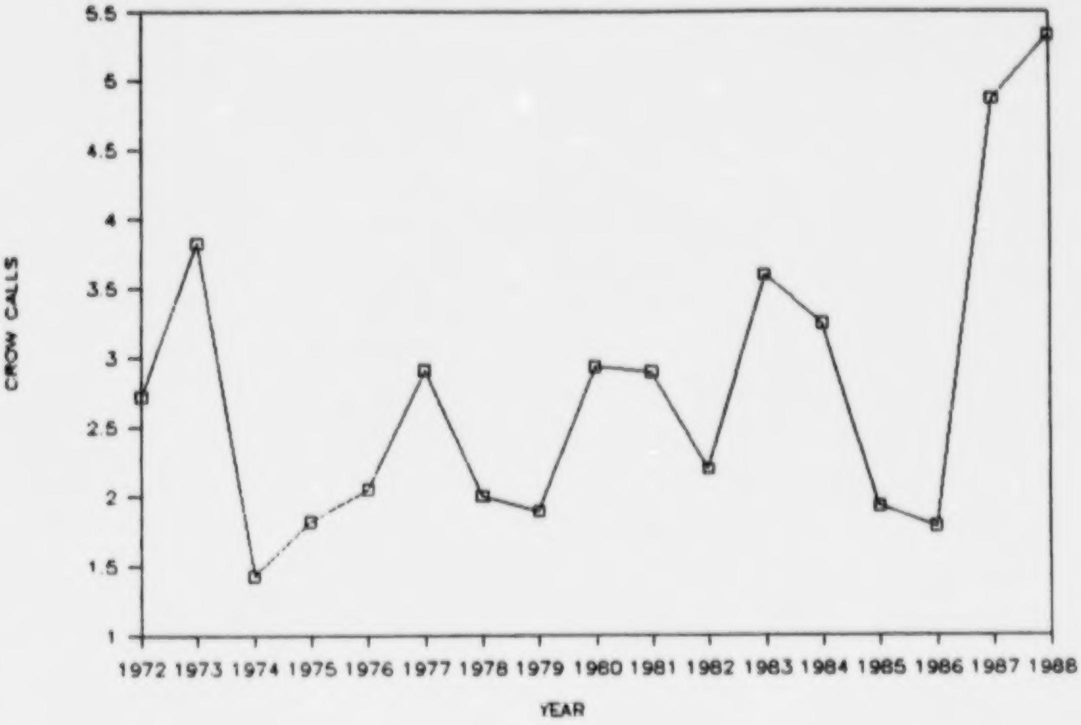


Figure 25. Saskatchewan 1987 pheasant harvest by weekly intervals.

Table 105. Cock pheasant breeding population surveys, spring 1988

Wildlife Management Zone	Survey Route	Pheasant Crows Heard/Survey Stop 1984	1985	1986	1987	1988
2	Val Marie	--	2.90	2.75	8.60	8.30
4	Woodrow Southwest	--	--	1.40	5.80	12.05
4	Bateman - Coderre	2.50	2.65	1.15	6.65	2.60
4	Pinto Creek	--	0.90	1.05	3.95	3.10
4	Notekeu Creek	3.85	1.25	2.25	6.15	4.80
5	Cadillac - Ponteix	--	1.11	0.84	5.27	6.10
5	Swift Current - Duncairn	1.15	1.05	1.95	3.25	3.80
6	Eastend	--	1.45	1.06	3.73	4.73
8	Maple Creek North	5.87	3.46	1.80	3.13	3.13
14	Estuary - Chesterfield	4.20	3.05	2.70	5.00	5.30
14	Snakebite	3.50	1.70	2.75	6.40	2.95
GRASSLAND		2.80	1.93	1.81	5.30	5.25 -1%*
15	Radville East	1.35	1.55	1.90	4.20	4.70
15	Marienthal	1.55	0.50	--	4.20	10.95
20	Moose Jaw South	4.20	2.40	1.30	1.45	1.15
FARMLAND		2.37	1.48	1.60	3.28	5.60 +70%*
PROVINCE		2.65	1.82	1.78	4.86	5.33 +10%*

*Percent difference in 1988 male pheasant crow calls compared to 1987; based on comparable survey routes.



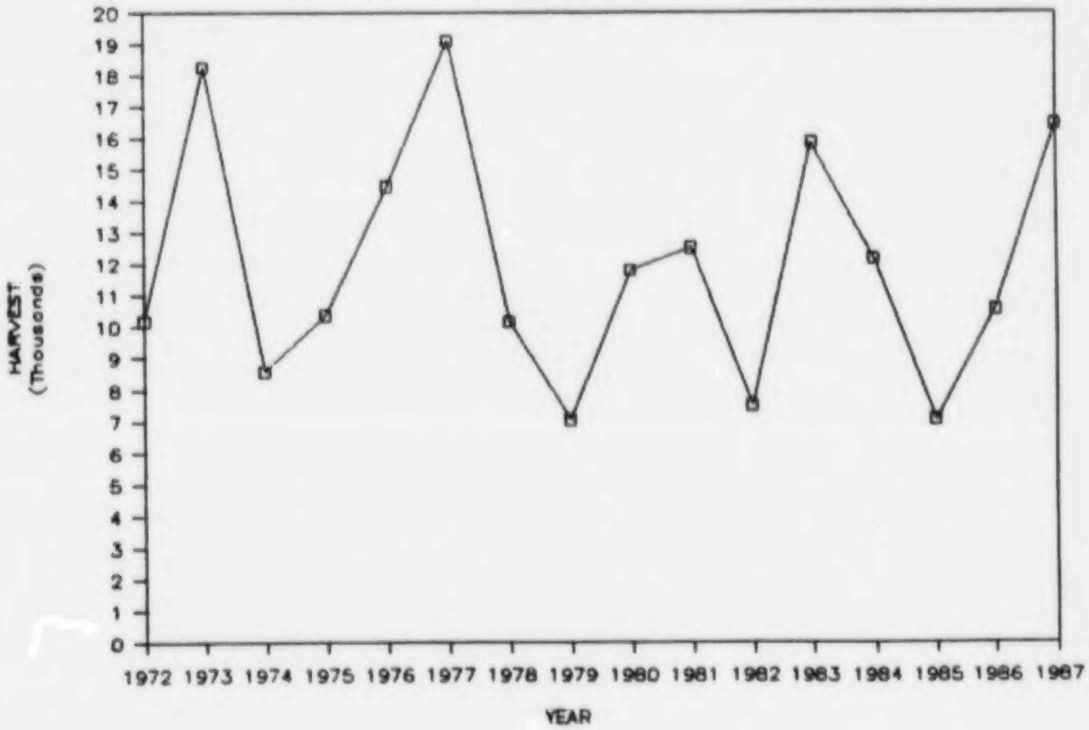


Figure 26. Saskatchewan Pheasant Spring Breeding Population Index vs Harvest, 1972-1988

Summary

The 1987 pheasant harvest was 40% above the 1976-86 average. Active hunters and recreation days increased in 1987 due to higher populations and improved reproduction. The 1988 spring breeding index is higher than estimates for the period 1972 to 1987. The last two mild winters have contributed to increased pheasant populations. Season dates for 1988 will allow pheasant hunting up to the opening of white-tailed deer season and will continue the traditional late pheasant season in December. The season will have a traditional opening of the first Wednesday in October.

1988 Pheasant Hunting Regulations *

The 1988 regulations are essentially unchanged from those of 1987 except for allowing a possession limit of three times the daily bag limit. Pheasants have recovered to good levels throughout their prime range and continuation of the late season is also warranted.

In order to keep prime pheasant habitat open for hunting, SPRC continues to urge hunters to seek permission to hunt and avoid vehicle abuse by walking for pheasants. Affected landowners can post their land with conditional access signs provided free-of-charge by the department promoting walk-in hunting.

WMZ Open	Season Dates (Inclusive)	Bag Limit
WMZ 1 to 36, including Elbow, Estevan-Cambria and Lomond #3 Wildlife Management Units	Oct 5 - Nov 19	3 cocks daily 9 cocks possession
WMZ 1 to 20, 24 and 31, including Estevan-Cambria and Lomond #3 Wildlife Management Units	Dec 5 - Dec 21	3 cocks daily 9 cocks possession

*Only Saskatchewan residents may hunt pheasants.

RUFFED GROUSE

1987 Hunting Activity and Harvest

In 1984, ruffed grouse populations had declined to the low point of the apparent 10-11 year population cycle. In 1985 the ruffed grouse harvest increased to 15,000 suggesting that populations had entered the increase phase of the population cycle. In 1986 the harvest tripled to 48,000 birds and in 1987 the harvest almost doubled to 89,300 birds (Table 106).

Active ruffed grouse hunters increased by 10% to 11,170 from the 10,147 recorded in 1986 in response to higher population levels. Hunting success rose to a 16 year high with an average of 8.0 birds harvested/active hunter. Harvest pressure doubled in the Forest Fringe zones with 0.85 birds harvested/km^2 (Table 108). The Forest zones accounted for almost half of the provincial harvest while 21% came from the Parkland zones. Harvest density and the chronology of the ruffed grouse harvest are illustrated in Figures 25 and 26 respectively.

WMZ 56 (Greenwater Park, Porcupine Forest) again ranked first in terms of ruffed grouse harvested/km^2 of total area (Table 109) while WMZ 67 accounted for the highest harvest in a zone at 12%. Thirty percent of the harvest took place in the two-week period October 5 to October 18, 1987 (Figure 26).

1987 Reproduction - Ruffed Grouse

The 1987 provincial reproduction index was determined to be 4.02 juveniles/adult based on a sample of 1,471 bird wings collected from the 1987 harvest (Table 110; Appendix 25, 26). This is 65% above the 1979-86 average and marks the third consecutive year of above average reproduction. The Forest index of 4.37 juveniles/adult is 49% above the 1979-86 average.

As ruffed grouse wings have only been collected since 1979, the duration of above average reproduction is unknown but expected to continue for 2 or 3 more years.

Table 106. Ruffed Grouse Hunting Data for Saskatchewan, 1972-1987

Year	Hunting Level				Hunting Success	
	Active Ruffed Grouse Hunters	Total Upland Bird Hunter Days	Upland Hunter Days/ Active Ruffed Grouse Hunter	Ruffed Grouse Harvest	Ruffed Grouse Harvested/Active Ruffed Grouse Hunter	Ruffed Grouse Harvested/ Upland Hunter Day
1972	11,057	56,534	5.1	29,853	2.7	0.53
1973	9,102	53,275	5.9	12,743	1.4	0.24
1974*	7,477	37,801	5.1	14,205	1.9	0.38
1975*	12,091	48,161	4.0	36,274	3.0	0.75
1976*	14,782	86,525	5.9	83,805	5.7	0.97
1977*	17,757	93,496	5.3	94,353	5.3	1.01
1978	17,042	72,380	4.2	94,203	5.5	1.30
1979	17,545	72,096	4.1	86,309	4.9	1.20
1980	18,363	75,578	4.1	91,514	5.0	1.21
1981	14,466	68,989	4.8	36,711	2.5	0.53
1982	10,215	50,382	4.9	16,886	1.7	0.34
1983	8,754	60,146	6.9	13,523	1.5	0.22
1984	6,706	44,854	6.7	12,974	1.9	0.29
1985	6,427	40,149	6.2	15,074	2.3	0.38
1986	10,147	74,900	7.4	47,978	4.7	0.64
1972-1986 Average	12,128	62,350	5.1	45,760	3.8	0.73
1987	11,170	83,179	7.4	89,322	8.0	1.07
% Change						
1987 from 1986	+10%	+11%	+1%	+86%	+70%	+67%
1987 from Average	-8%	+33%	+45%	+95%	+111%	+47%

*Data published for these years were inaccurate.

Table 107. Ruffed grouse harvest and hunting pressure by Wildlife Management Zone, 1987.

WMZ	Total Kill	% of Harvest	Active Hunters per WMZ	Kill per sq.Km.	Kill per Day	Total Hunter Days	Species Hunter Days
1	41	0.05	38	0.005	0.0	2,106	23
2	75	0.08	56	0.007	0.0	3,689	34
3	31	0.03	6	0.007	0.4	78	6
4	50	0.06	50	0.006	0.0	5,280	22
5	37	0.04	46	0.006	0.0	2,763	9
6	25	0.03	12	0.006	0.1	387	6
7	59	0.07	25	0.031	0.4	161	32
8	0	0.00	0	0.000	0.0	314	0
9	37	0.04	31	0.011	0.0	1,333	16
10	124	0.14	62	0.035	0.1	1,662	44
11	0	0.00	0	0.000	0.0	488	0
12	9	0.01	8	0.027	0.1	173	2
13	67	0.07	52	0.016	0.1	1,349	25
14	96	0.11	68	0.017	0.1	1,307	56
GR	650	0.73	455	0.010	0.0	21,090	273
15	270	0.30	109	0.040	0.0	6,679	85
16	118	0.13	44	0.022	0.1	1,209	22
17	356	0.40	236	0.093	0.2	1,729	138
18	176	0.20	86	0.024	0.1	2,568	47
19	105	0.12	64	0.011	0.0	6,616	44
20	199	0.22	84	0.036	0.2	1,066	83
21	1,112	1.24	401	0.133	0.3	3,425	394
22	25	0.03	31	0.005	0.0	839	6
23	68	0.08	50	0.012	0.1	1,440	28
24	56	0.06	45	0.012	0.0	1,609	39
25	0	0.00	12	0.000	0.0	577	0
26	44	0.05	19	0.010	0.1	401	6
27	128	0.14	39	0.026	0.8	171	28
28	0	0.00	12	0.000	0.0	146	0
29	155	0.17	77	0.029	0.1	1,726	38
30	452	0.51	242	0.062	0.4	1,025	184
FA	3,263	3.65	1,552	0.036	0.1	31,225	1,142
31	12	0.01	19	0.005	0.0	1,131	6
32	56	0.06	31	0.020	0.3	202	16
33	2,722	3.05	447	0.701	2.2	1,246	658
34	251	0.28	140	0.047	0.6	420	88
35	403	0.45	177	0.154	1.0	423	159
36	616	0.69	216	0.119	1.0	625	211
37	2,123	2.38	523	0.188	1.9	1,135	597
38	897	1.00	249	0.140	1.5	593	272
39	1,793	2.01	498	0.236	2.5	714	533
40	646	0.72	195	0.119	0.8	768	192
41	453	0.51	196	0.063	1.0	472	135
42	2,958	3.31	540	0.399	2.6	1,135	752
43	2,031	2.27	433	0.300	2.3	901	484
44	873	0.98	306	0.191	1.1	782	297
45	797	0.89	305	0.104	0.9	866	257
46	375	0.42	152	0.063	1.6	242	108
47	1,642	1.84	374	0.287	2.0	817	479
PA	18,649	20.87	4,801	0.189	1.5	12,472	5,244
48	1,696	1.90	273	0.670	3.6	475	327
49	1,159	1.30	201	0.484	3.4	336	200
50	4,225	4.73	535	1.268	3.4	1,236	787
51	1,373	1.54	267	0.478	3.1	447	334
52	1,625	1.82	518	0.558	2.2	736	463
53	3,667	4.10	466	1.323	4.2	883	663
54	5,180	5.80	691	0.909	3.4	1,511	1,153
55	3,313	3.71	456	0.884	3.4	990	661
FF	22,238	24.89	3,407	0.847	3.4	6,613	4,588
56	7,455	8.34	836	1.577	4.6	1,621	1,350
57	2,593	2.90	307	0.784	4.9	534	383
58	854	0.96	128	0.381	3.4	252	154
59	2,865	3.21	411	0.489	4.1	707	518
60	1,748	1.96	258	0.455	4.0	438	291
61	388	0.43	98	0.128	3.7	105	99
62	2,799	3.13	287	0.749	3.7	750	423
63	2,553	2.86	495	0.451	1.9	1,339	591
64	1,876	2.10	229	0.529	3.2	593	321
65	1,131	1.27	152	0.173	3.3	345	168
66	2,685	3.01	269	0.238	4.1	662	431
67	10,764	12.05	932	1.241	4.9	2,221	1,597
68	3,532	3.95	300	0.849	4.5	780	552
69	1,905	2.13	228	0.246	3.1	617	357
70	471	0.53	101	0.055	2.3	203	125
71	177	0.20	35	0.010	1.6	114	54
72	298	0.33	102	0.016	2.4	124	78
73	341	0.38	77	0.007	2.0	168	84
FO	44,437	49.73	5,246	0.269	3.8	11,574	7,577
74	100	0.11	19	0.002	2.0	50	19
75	25	0.03	6	0.000	2.7	9	3
76	0	0.00	0	0.000	0.0	16	0
NS	124	0.14	25	0.001	1.7	75	22
>>>>>>>>>>>>>>>>>>>>> T O T A L >>>>>>>>>>>>>>>>>>>>>>	89,361	100.00	15,486	0.142	1.1	83,049	18,846

* Hunter Days are based on all Upland Hunting.
* The Total Active Hunter value is NOT the true Provincial Total.

Table 108. Ruffed Grouse Hunting Data for Saskatchewan by Ecological Divisions, 1987 vs 1986.

	Grassland Zones 1-14		Farmland Zones 15-30		Parkland Zones 31-47		Forest Fringe Zones 48-55		Forest Zones 56-73		Province* Zones 1-73	
	1987	1986	1987	1986	1987	1986	1987	1986	1987	1986	1987	1986
Ruffed Grouse Harvest	650	522	3,263	2,417	18,649	12,305	22,238	10,757	44,437	21,797	89,237	47,805
(% of Total)	0.7	1.1	3.7	5.1	20.9	25.7	24.9	22.5	49.7	45.6	99.9	100%
Harvest Pressure (kill/sq km)	.010	.008	.036	.027	.189	.125	.847	.410	.269	.132	.200	.107
All Upland Bird Hunter Days	21,090	16,844	31,225	32,943	12,472	12,277	6,613	4,297	11,574	8,416	82,974	74,777
(% of Total)	25.4	22.5	37.6	44.1	15.0	16.4	8.0	5.7	13.9	11.3	99.9	99.9
Species Hunter Days	273	226	1,142	968	5,244	3,802	4,588	2,787	7,577	4,982	18,824	12,765
(% of Total)	1.5	1.8	6.1	7.6	27.9	29.8	24.4	21.8	40.3	39.0	99.9	99.9
Hunter Pressure (Upland Hunter Days/ sq km)	.325	.260	.344	.363	.127	.125	.252	.164	.070	.051	.186	.168
Hunter Success (Kill/Upland Hunter Day)	.031	.031	.104	.073	1.50	1.00	3.36	2.50	3.84	2.59	1.08	0.64
Hunter Success (Kill/Species Hunter Day)	2.38	2.31	2.86	2.50	3.56	3.24	4.85	3.86	5.86	4.38	4.74	3.75

*Northern Shield Division Zones 74-76 excluded from calculations because of insignificance to ruffed grouse hunting (0.14% of harvest in 1987).

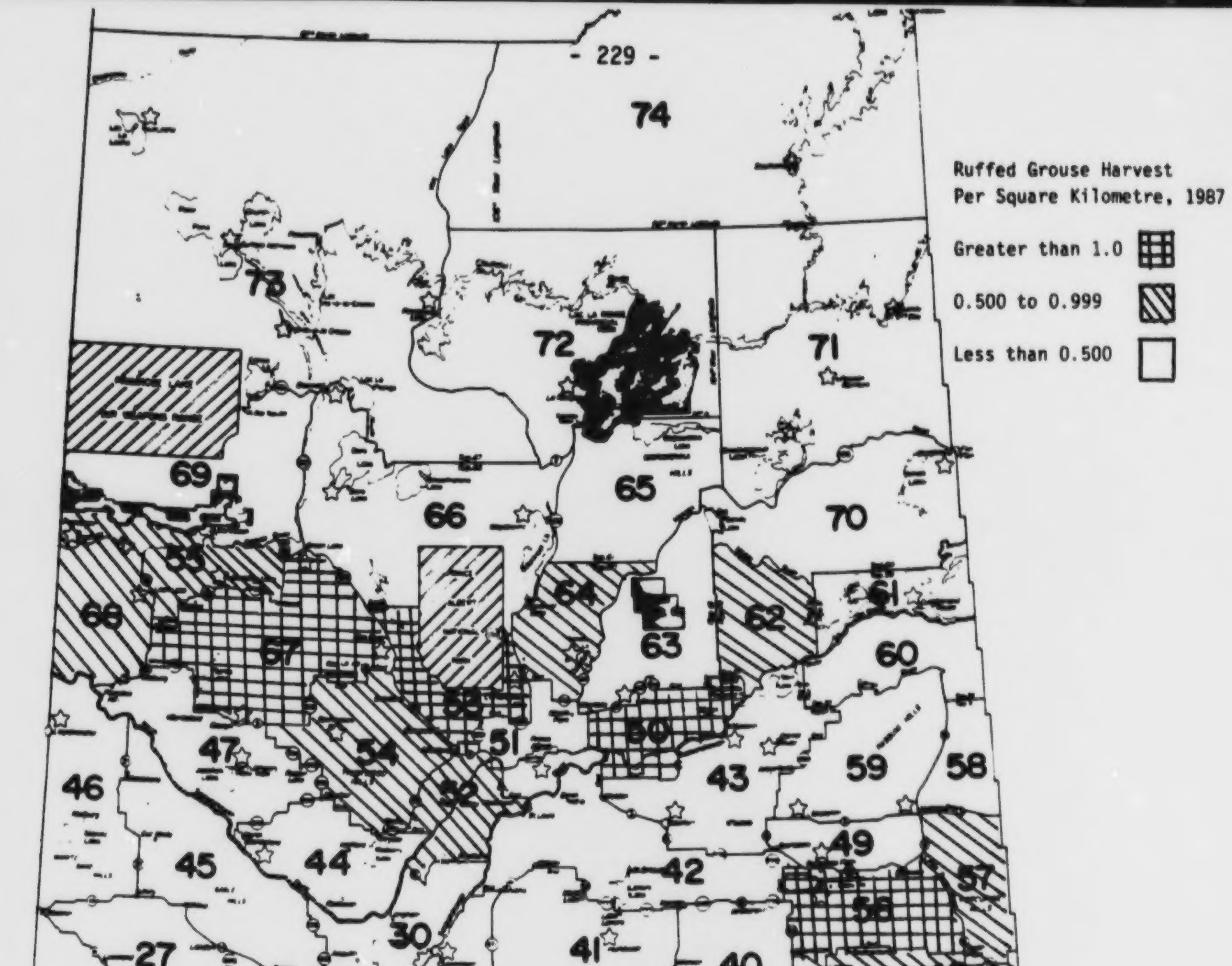

Ruffed Grouse Harvest
Per Square Kilometre, 1987
Greater than 1.0 ▦
0.500 to 0.999 ▨
Less than 0.500 ☐
74
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Figure 27. Saskatchewan Ruffed Grouse Harvest Density, 1987

Table 109. Five Important Ruffed Grouse Harvest Zones in Saskatchewan, 1985-1987

	1985			1986			1987		
Rank*	Wildlife Mgmt. Zone	Ruffed Grouse Harvest/ Sq km Total Area	% of Provincial Harvest	Wildlife Mgmt. Zone	Ruffed Grouse Harvest/ Sq km Total Area	% of Provincial Harvest	Wildlife Mgmt. Zone	Ruffed Grouse Harvest/ Sq km Total Area	% of Provincial Harvest
1st	55	.235	5.85	56	.926	9.15	56	1.577	8.34
2nd	48	.205	3.45	48	.680	3.60	53	1.323	4.10
3rd	53	.182	3.35	55	.578	4.54	50	1.268	4.73
4th	67	.166	9.57	53	.542	3.15	67	1.241	12.05
5th	52	.154	2.97	49	.493	2.47	54	0.909	5.80
Total	Leading 5 Zones	.184	25.19	Leading 5 Zones	.677	22.91	Leading 5 Zones	1.24	35.02

*Ranked according to harvest density based on zone area in km^2; native habitat areas not yet available for 76 Wildlife Management Zones.

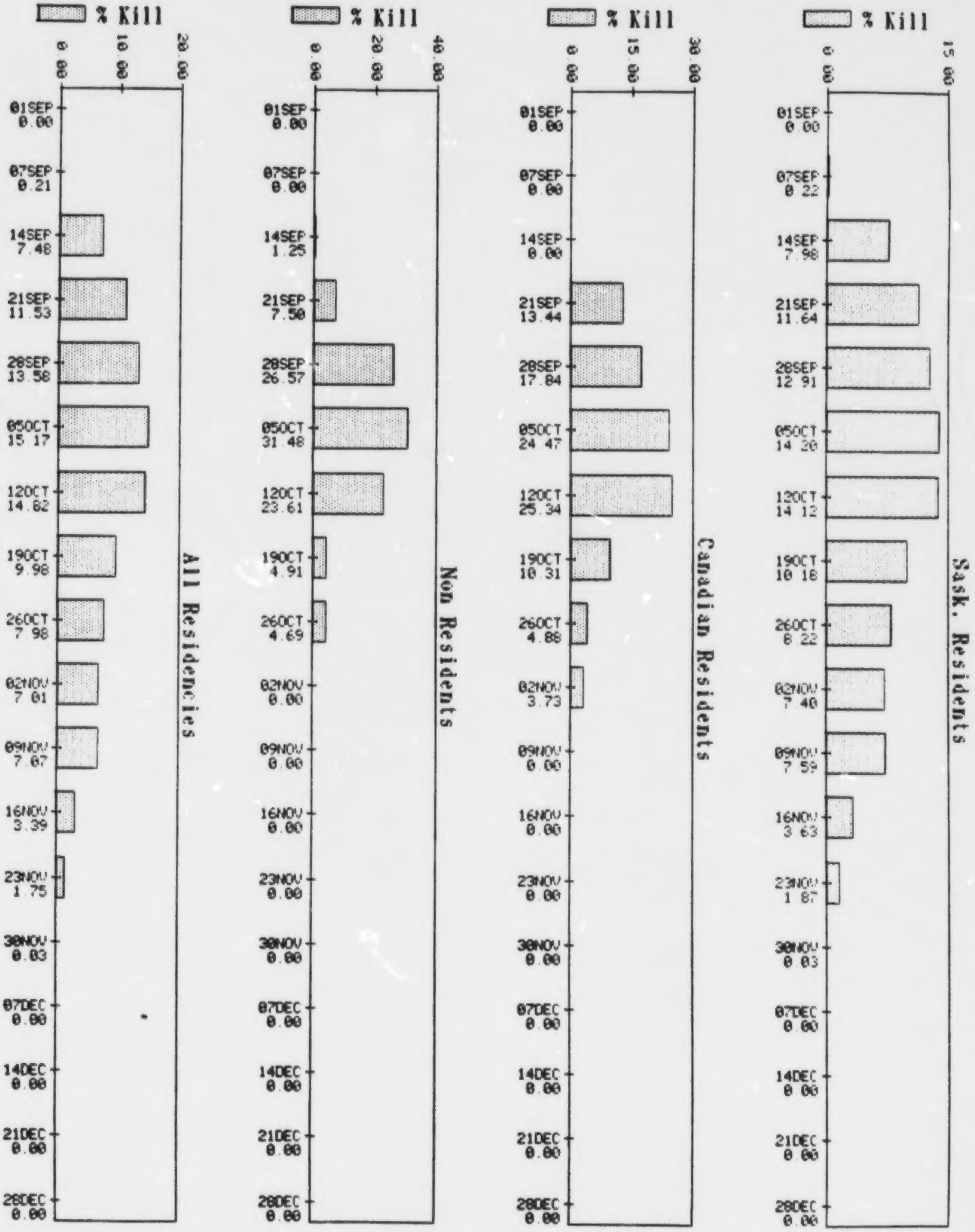

Figure 28. Saskatchewan 1987 ruffed grouse harvest by weekly intervals.

Table 110. Ruffed Grouse Reproduction in Saskatchewan, 1982-1987
(Based on wing samples from harvest)

Wildlife Management Division	(Juveniles/Adult in Harvest) 1982	1983	1984	1985	1986	1979-86 Average	1987	% Change 1987 from 1986	1987 from Average (1979-1986)
Farmland	1.23*	1.14*	1.90*	1.11*	3.08*	1.36	0.60*	-81%	-56%
Parkland	2.43	2.29	1.75	3.62	4.27	2.29	3.92	-8%	+71%
Forest Fringe	N/A	N/A	3.17*	3.24	3.00	3.09**	3.28	+9%	+6%
Forest	3.80*	4.80	1.93	3.77	3.22	2.94	4.37	+36%	+49%
Province	2.28	2.51	1.97	3.45	3.37	2.44	4.02	+19%	+65%

* Sample less than 50 wings
**1984-1986 Average

1988 Ruffed Grouse Breeding Population

The 1988 spring drumming surveys indicate increased populations in the Forest Fringe and Parkland zones. The Forest index is similar to the 1987 survey for 9 comparable survey routes (Table 111). The provincial breeding index of 1.34 drums heard per survey stop is up by 15% for comparable surveys. Hunters indicated that 1987 fall populations were up throughout the Forest Fringe and Forest zones.

In 1988 the Parkland area (WMZ 31-47) exhibited an apparent population increase and is now equivalent to the Forest index at 1.42 drums/survey stop. The Woody Road South route in WMZ 57 had the highest number of drumming males at 3.35/stop.

Figure 27 (Appendix 27) illustrates the relationship which has been apparent between hunter harvest and the cyclic nature of provincial ruffed grouse populations over the last 16 years. Populations have increased dramatically in 1986 and 1987. Hunters should see good numbers of ruffed grouse for the fall of 1988 throughout the Forest Fringe, Forest and some Parkland zones. Populations appear to be in the initial phase of cyclic increase in the Parklands.

Summary

The 1987 season saw an increase in bag limits throughout the Forest Fringe and Forest zones. The 1988 season will maintain a status quo in bag limits with slight calendar changes in season dates. In the Grasslands, Farmlands and Parklands the proposed season opening coincides with the Hungarian partridge and sharp-tailed grouse opening date (Sept 21). To maintain the traditional overlap between ruffed grouse seasons and big game seasons in the Forest and Shield, hunting season dates are September 7 - December 3. Only the initial 10 days of the bear season, and early moose season in WMZ 70-76, and the last week of the late elk season in WMZ 53 are not encompassed by these dates.

Table 111. Ruffed Grouse Breeding Population Surveys, Spring 1988

Wildlife Management Zone	Survey Route	No. of Stops	Drums Heard/Survey Stop 1985	1986	1987	1988
7	Cypress Hills	18	--	--	1.44	0.94
21	Bulyea	18	0.61	1.20	--	1.44
33	Moose Mountain Park	20	0.40	--	0.80	1.33
37	Duck Mountain Park	20	1.50	1.85	1.55	1.80
38	Bryce Lake	15	--	0.73	0.60	0.33
39	Parkerview	20	0.05	0.25	0.95	2.00
43	Blue Jay Tower	14	--	--	0.60	1.28
46	Battle River - Freemont	21	1.60	0.48	1.33	1.52
47	Sandwith	15	0.26	0.87	0.47	1.53
PARKLAND			0.91	0.88	0.86	1.42
						+48%*
48	Rockford	14	--	1.29	--	2.07
50	Fort a la Corne	17	1.05	1.47	0.24	0.82
54	Chitek	20	--	--	0.80	0.20
54	Mistawasis	15	--	--	1.20	1.93
55	St. Cyr Lake	22	0.83	0.87	1.03	1.00
FOREST FRINGE			0.91	1.09	0.75	1.18
						+20%*
56	McBride Lake	15	1.40	1.00	1.67	1.73
56	Greenwater	24	0.87	0.87	0.33	1.22
57	Woody Road South	17	0.65	1.88	1.48	3.35
59	Fir River Road	20	0.85	1.10	--	1.25
60	Squaw Rapids East	18	0.95	0.72	1.28	0.85
63	Torch River	15	--	--	1.20	0.93
53 & 66	Tote Road	20	2.15	3.55	3.20	1.70
68	Railroad Grade	20	1.30	1.45	0.65	0.80
66 & 69	Green Lake North	13	--	--	1.45	1.40
69	Mistohay	20	0.80	2.80	1.05	0.60
FOREST			1.12	1.61	1.35	1.39
						0%
PROVINCE	24 survey routes		1.01	1.27	1.01	1.34
						+15%*

*Percent difference in 1988 ruffed grouse drums compared to 1987; based on comparable survey routes.

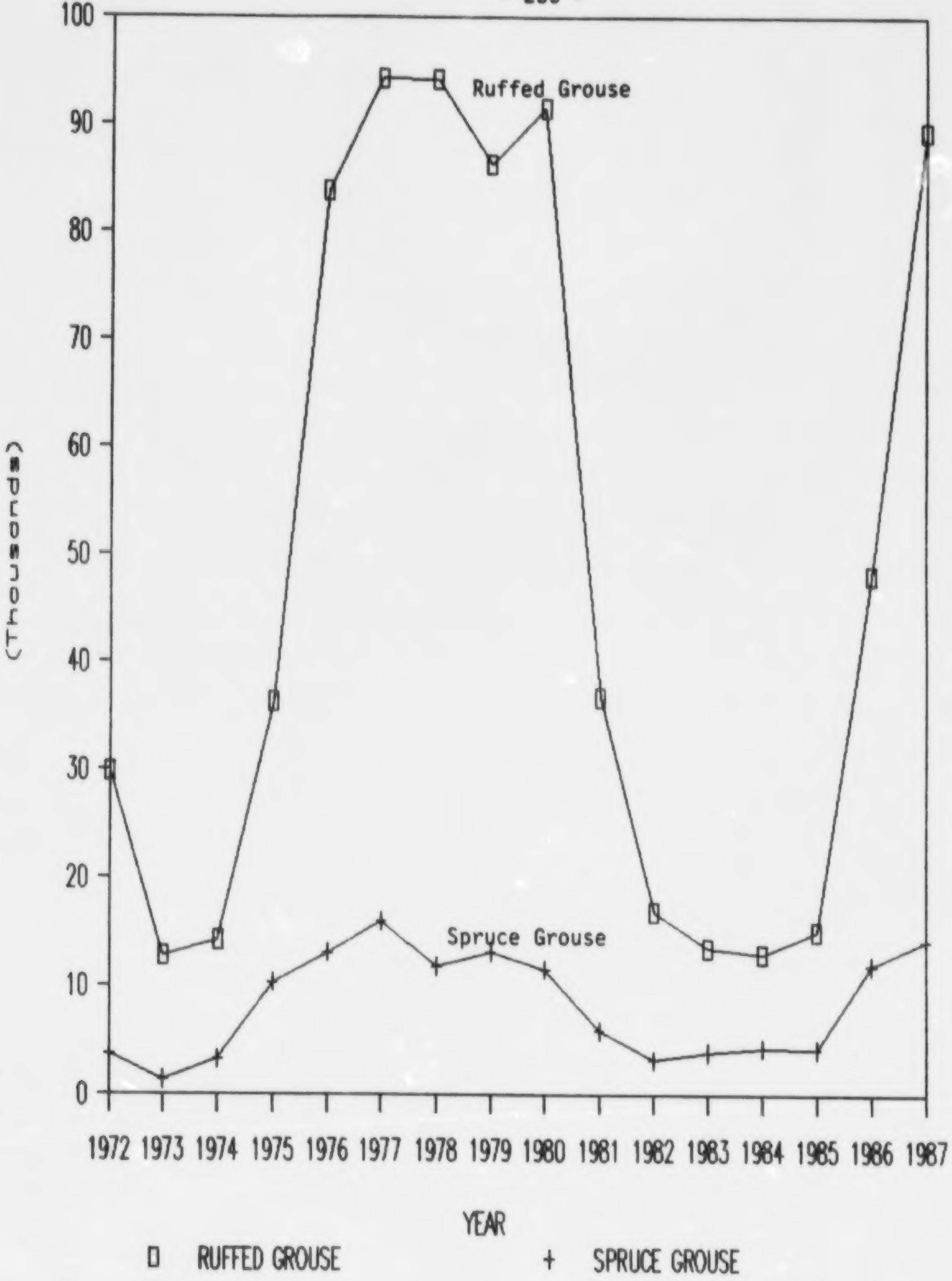

Figure 29. Saskatchewan Ruffed and Spruce Grouse Harvest, 1972-1987

The 1987 ruffed grouse harvest was almost double that of 1986. Spring surveys in 1988 have shown an improvement in populations in the Parklands and Forest Fringe. Forest zones showed substantial harvest increases in 1987 indicating the population is cycling towards a peak. The Parkland populations are exhibiting a lag in synchrony with the cycle in Forest populations. No changes are proposed in bag limits. Season dates are similar to 1987 in the south with a Wednesday opening coinciding with sharp-tailed grouse and Hungarian partridge. In WMZ 48-76 the season will have a week earlier opening than 1987 on the Wednesday following Labour Day (September 7).

1988 Ruffed Grouse Hunting Regulations

WMZ Open	Season Dates (Inclusive)	Bag Limit
WMZ 1-47, including Elbow and Last Mountain Lake Wildlife Management Units; and Duck Mountain and Moose Mountain Provincial Parks	Sept. 21 - Nov. 19	5 daily 10 possession
WMZ 48-76, including Clearwater River, Greenwater, Lac la Ronge, Meadow Lake and Nipawin Provincial Parks; Fort a la Corne Wildlife Management Unit; and Bronson Forest Recreation Site	Sept. 7 - Dec. 3	10 daily 20 possession

SPRUCE GROUSE

1987 Hunting Activity and Harvest

The 1987 spruce grouse harvest of 14,213 birds increased 20% from 1986 and tripled the 1985 level (4,230). Eighty-five percent (85%) of the 3,123 active hunters were successful and 3,838 recreation days were provided. WMZ 63 and 67 provided 28.5% of the harvest. Spring surveys and wing collections are not conducted for spruce grouse, but this species is believed to cycle in a fashion similar to ruffed grouse populations.

Table 112 outlines spruce grouse hunting activity and harvest in 1987 while Figure 28 outlines the chronology of the harvest by weekly intervals. Harvest density is outlined in Figure 29.

1988 Spruce Grouse Hunting Regulations

The season opening date and spruce grouse bag limit for WMZ 43 (the only Parkland Zone open for spruce grouse hunting) coincides with the ruffed grouse regulations in that zone to simplify regulations for local upland bird hunters. The sharp-tailed grouse and Hungarian partridge seasons are also slated to open September 21 in WMZ 43. The season in WMZ 48-76 will coincide with the ruffed grouse season opening on September 7. The bag limit of ten birds daily, similar to the ruffed grouse bag limits will be maintained in the Forest Fringe, Forest and Northern Shield zones.

WMZ Open	Season Dates (Inclusive)	Bag Limit
WMZ 43	Sept. 21 - Nov. 19	5 daily 10 possession
WMZ 48-76, including Clearwater River, Lac la Ronge, Meadow Lake and Nipawin Provincial Parks; Fort a la Corne Wildlife Management Unit; and Bronson Forest Recreation Site	Sept. 7 - Dec. 3	10 daily 20 possession

Table 112. Saskatchewan spruce grouse harvest and hunting pressure by Wildlife Management Zone, 1987

WMZ	Total Kill	% of Harvest	Active Hunters per WMZ	Kill per sq.Km.	Kill per Day	Total Hunter Days	Species Hunter Days
1	0	0.00	0	0.000	0.0	2,106	0
2	0	0.00	0	0.000	0.0	3,689	0
3	0	0.00	0	0.000	0.0	78	0
4	0	0.00	0	0.000	0.0	5,280	0
5	0	0.00	0	0.000	0.0	2,763	0
6	0	0.00	0	0.000	0.0	387	0
7	0	0.00	0	0.000	0.0	161	0
8	0	0.00	0	0.000	0.0	314	0
9	0	0.00	0	0.000	0.0	1,333	0
10	0	0.00	0	0.000	0.0	1,662	0
11	0	0.00	0	0.000	0.0	488	0
12	0	0.00	0	0.000	0.0	173	0
13	0	0.00	0	0.000	0.0	1,349	0
14	0	0.00	0	0.000	0.0	1,307	0
GR	0	0.00	0	0.000	0.0	21,090	0
15	0	0.00	0	0.000	0.0	6,679	0
16	0	0.00	0	0.000	0.0	1,209	0
17	0	0.00	0	0.000	0.0	1,729	0
18	0	0.00	0	0.000	0.0	2,568	0
19	0	0.00	0	0.000	0.0	6,616	0
20	0	0.00	0	0.000	0.0	1,066	0
21	0	0.00	0	0.000	0.0	3,425	0
22	0	0.00	0	0.000	0.0	839	0
23	0	0.00	0	0.000	0.0	1,440	0
24	0	0.00	0	0.000	0.0	1,609	0
25	0	0.00	0	0.000	0.0	577	0
26	0	0.00	0	0.000	0.0	401	0
27	0	0.00	0	0.000	0.0	171	0
28	0	0.00	0	0.000	0.0	146	0
29	0	0.00	0	0.000	0.0	1,726	0
30	0	0.00	0	0.000	0.0	1,025	0
FA	0	0.00	0	0.000	0.0	31,225	0
31	0	0.00	0	0.000	0.0	1,131	0
32	0	0.00	0	0.000	0.0	202	0
33	0	0.00	0	0.000	0.0	1,246	0
34	0	0.00	0	0.000	0.0	420	0
35	0	0.00	0	0.000	0.0	423	0
36	0	0.00	0	0.000	0.0	625	0
37	0	0.00	0	0.000	0.0	1,135	0
38	0	0.00	0	0.000	0.0	593	0
39	0	0.00	0	0.000	0.0	714	0
40	0	0.00	0	0.000	0.0	768	0
41	0	0.00	0	0.000	0.0	472	0
42	0	0.00	0	0.000	0.0	1,135	0
43	342	2.41	108	0.051	0.4	901	133
44	0	0.00	0	0.000	0.0	782	0
45	0	0.00	0	0.000	0.0	866	0
46	0	0.00	0	0.000	0.0	242	0
47	0	0.00	0	0.000	0.0	817	0
PA	342	2.41	108	0.003	0.0	12,472	133
48	159	1.12	53	0.063	0.3	475	30
49	84	0.59	34	0.035	0.3	336	24
50	837	5.89	234	0.251	0.7	1,236	251
51	141	0.99	95	0.049	0.3	447	54
52	260	1.83	127	0.089	0.4	736	95
53	310	2.18	204	0.112	0.4	883	133
54	249	1.75	105	0.044	0.2	1,511	100
55	373	2.62	106	0.099	0.4	990	110
FF	2,412	16.97	958	0.092	0.4	6,613	797
56	301	2.12	167	0.064	0.2	1,621	138
57	372	2.61	127	0.112	0.7	534	79
58	212	1.49	80	0.094	0.8	252	61
59	443	3.12	154	0.076	0.6	707	125
60	296	2.09	108	0.077	0.7	438	110
61	22	0.16	28	0.007	0.2	105	9
62	767	5.40	189	0.205	1.0	750	207
63	2,621	18.44	410	0.463	2.0	1,339	550
64	636	4.47	154	0.179	1.1	593	187
65	990	6.97	154	0.152	2.9	345	165
66	755	5.31	217	0.067	1.1	662	186
67	1,446	10.17	458	0.167	0.7	2,221	435
68	678	4.77	116	0.163	0.9	780	157
69	828	5.83	195	0.107	1.3	617	215
70	266	1.87	97	0.031	1.3	203	90
71	114	0.80	38	0.006	1.0	114	44
72	120	0.84	80	0.007	1.0	124	43
73	389	2.74	53	0.008	2.3	168	71
FO	11,256	79.20	2,823	0.068	1.0	11,574	2,869
74	153	1.07	28	0.003	3.1	50	27
75	0	0.00	0	0.000	0.0	9	0
76	50	0.35	6	0.001	3.2	16	12
NS	202	1.42	34	0.001	2.7	75	40
TOTAL	14,213	100.00	3,923	0.023	0.2	83,049	3,838

* Hunter Days are based on all Upland Hunting.

* The Total Active Hunter value is NOT the true Provincial Total.

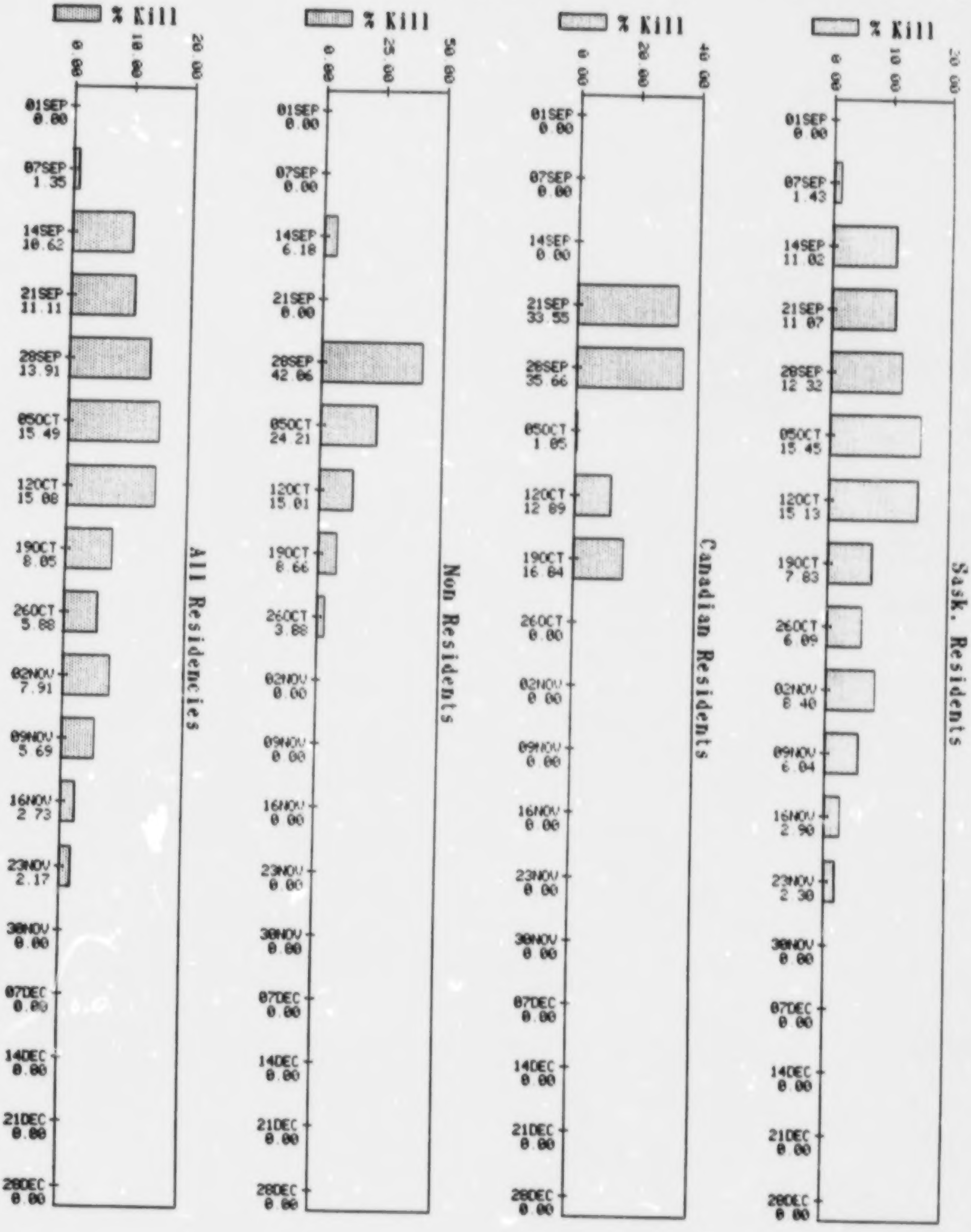

Figure 30. Saskatchewan 1987 spruce grouse harvest by weekly intervals.

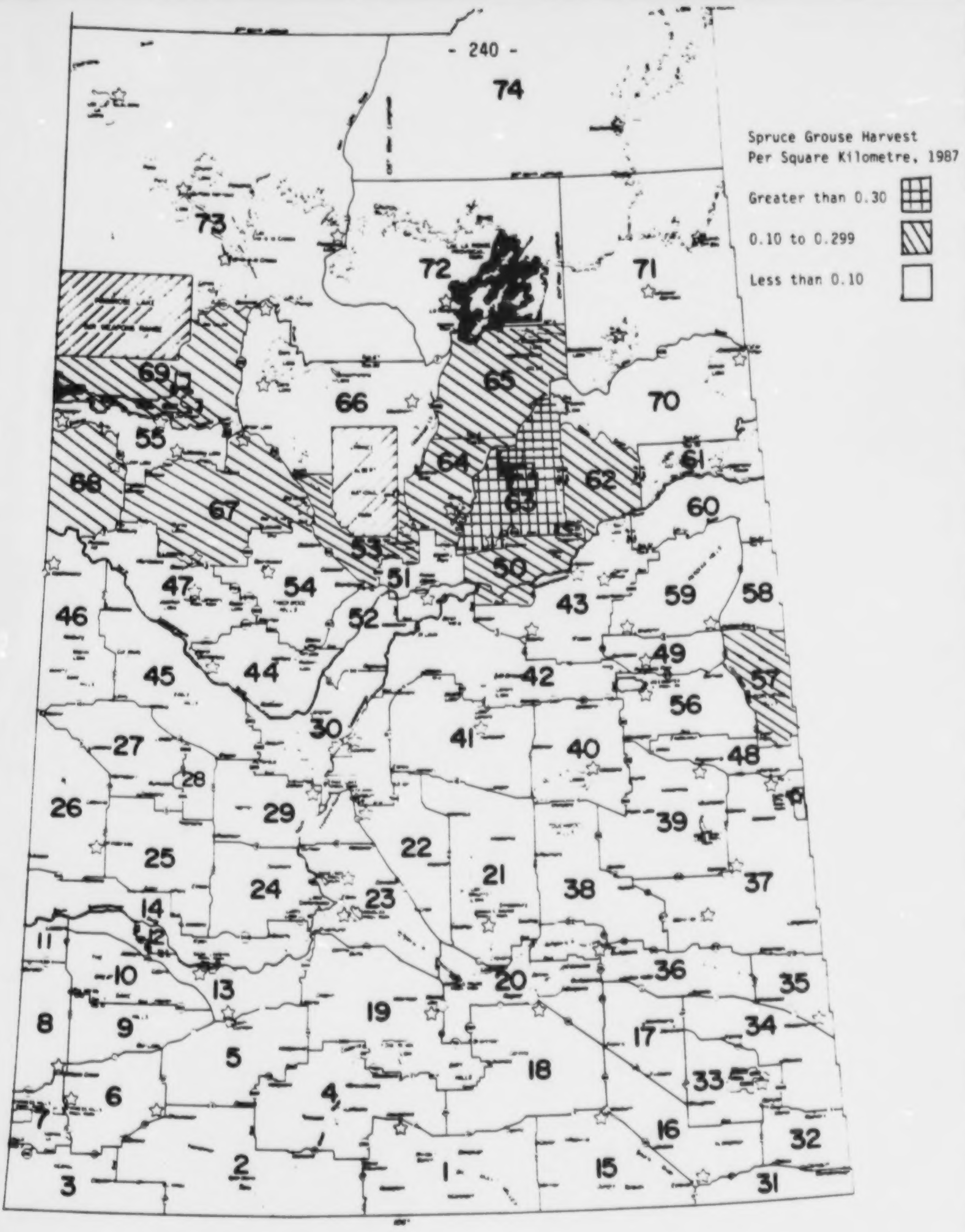
Spruce Grouse Harvest
Per Square Kilometre, 1987
Greater than 0.30
0.10 to 0.299
Less than 0.10
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Figure 31. Saskatchewan Spruce Grouse Harvest Density, 1987

PTARMIGAN

Prior to 1988, little information was available on Saskatchewan ptarmigan distribution, numbers or utilization by sport hunters. Migrations are known to occur into the Deschambault Lake area and into the White Lake area near the Reindeer River. Most of the ptarmigan range is relatively inaccessible and utilization is largely opportunistic by big game hunters and trappers. In 1987, the ptarmigan was placed on the 1987 bird hunter questionnaire to collect some baseline data regarding harvest, hunter days provided and hunter interest.

1987 Hunting Activity and Harvest

The 1987 questionnaire data indicated a harvest of 330 willow ptarmigan in WMZ 72-76. There were 68 active hunters who averaged 4.85 birds/hunter (Table 113). About 44 hunter recreation days were provided indicating that some hunters hunted only a half day or less. Non-residents did not partake in ptarmigan hunting according to the questionnaire. The chronology of the 1987 harvest is portrayed in Figure 30. Almost half the harvest occurred during the week of December 7.

1988 Ptarmigan Hunting Regulations

WMZ Open	Season Dates (Inclusive)	Bag Limit
WMZ 61-66, 69-76, including Clearwater River and Lac la Ronge Provincial Park	Nov. 14/88- Mar. 31/89	10 daily 20 possession

Table 113. Saskatchewan ptarmigan harvest and hunting pressure by Wildlife Management Zone, 1987

WMZ	Total Kill	% of Harvest	Active Hunters per WMZ	Kill per sq.Km.	Kill per Day	Total Hunter Days	Species Hunter Days
1	0	0.00	0	0.000	0.0	2,106	0
2	0	0.00	0	0.000	0.0	3,689	0
3	0	0.00	0	0.000	0.0	78	0
4	0	0.00	0	0.000	0.0	5,280	0
5	0	0.00	0	0.000	0.0	2,763	0
6	0	0.00	0	0.000	0.0	387	0
7	0	0.00	0	0.000	0.0	161	0
8	0	0.00	0	0.000	0.0	314	0
9	0	0.00	0	0.000	0.0	1,333	0
10	0	0.00	0	0.000	0.0	1,662	0
11	0	0.00	0	0.000	0.0	488	0
12	0	0.00	0	0.000	0.0	173	0
13	0	0.00	0	0.000	0.0	1,349	0
14	0	0.00	0	0.000	0.0	1,307	0
GR	0	0.00	0	0.000	0.0	21,090	0
15	0	0.00	0	0.000	0.0	6,679	0
16	0	0.00	0	0.000	0.0	1,209	0
17	0	0.00	0	0.000	0.0	1,729	0
18	0	0.00	0	0.000	0.0	2,560	0
19	0	0.00	0	0.000	0.0	6,616	0
20	0	0.00	0	0.000	0.0	1,066	0
21	0	0.00	0	0.000	0.0	3,425	0
22	0	0.00	0	0.000	0.0	839	0
23	0	0.00	0	0.000	0.0	1,440	0
24	0	0.00	0	0.000	0.0	1,609	0
25	0	0.00	0	0.000	0.0	577	0
26	0	0.00	0	0.000	0.0	401	0
27	0	0.00	0	0.000	0.0	171	0
28	0	0.00	0	0.000	0.0	146	0
29	0	0.00	0	0.000	0.0	1,726	0
30	0	0.00	0	0.000	0.0	1,025	0
FA	0	0.00	0	0.000	0.0	31,225	0
31	0	0.00	0	0.000	0.0	1,131	0
32	0	0.00	0	0.000	0.0	202	0
33	0	0.00	0	0.000	0.0	1,246	0
34	0	0.00	0	0.000	0.0	420	0
35	0	0.00	0	0.000	0.0	423	0
36	0	0.00	0	0.000	0.0	625	0
37	0	0.00	0	0.000	0.0	1,135	0
38	0	0.00	0	0.000	0.0	593	0
39	0	0.00	0	0.000	0.0	714	0
40	0	0.00	0	0.000	0.0	768	0
41	0	0.00	0	0.000	0.0	472	0
42	0	0.00	0	0.000	0.0	1,135	0
43	0	0.00	0	0.000	0.0	901	0
44	0	0.00	0	0.000	0.0	782	0
45	0	0.00	0	0.000	0.0	866	0
46	0	0.00	0	0.000	0.0	242	0
47	0	0.00	0	0.000	0.0	817	0
PA	0	0.00	0	0.000	0.0	12,472	0
48	0	0.00	0	0.000	0.0	475	0
49	0	0.00	0	0.000	0.0	336	0
50	0	0.00	0	0.000	0.0	1,236	0
51	0	0.00	0	0.000	0.0	447	0
52	0	0.00	0	0.000	0.0	736	0
53	0	0.00	0	0.000	0.0	883	0
54	0	0.00	0	0.000	0.0	1,511	0
55	0	0.00	0	0.000	0.0	990	0
FF	0	0.00	0	0.000	0.0	6,613	0
56	0	0.00	0	0.000	0.0	1,621	0
57	0	0.00	0	0.000	0.0	534	0
58	0	0.00	0	0.000	0.0	252	0
59	0	0.00	0	0.000	0.0	707	0
60	0	0.00	0	0.000	0.0	438	0
61	0	0.00	0	0.000	0.0	105	0
62	0	0.00	0	0.000	0.0	750	0
63	0	0.00	6	0.000	0.0	1,339	0
64	0	0.00	0	0.000	0.0	593	0
65	0	0.00	6	0.000	0.0	345	0
66	0	0.00	0	0.000	0.0	662	0
67	0	0.00	0	0.000	0.0	2,221	0
68	0	0.00	0	0.000	0.0	780	0
69	0	0.00	0	0.000	0.0	617	0
70	0	0.00	0	0.000	0.0	203	0
71	0	0.00	12	0.000	0.0	114	0
72	19	5.66	12	0.001	0.2	124	3
73	131	39.62	19	0.003	0.8	168	22
FD	149	45.28	56	0.001	0.0	11,574	25
74	75	22.64	12	0.002	1.5	50	6
75	62	18.87	6	0.001	6.7	9	6
76	44	13.21	12	0.001	2.8	16	3
NS	180	54.72	31	0.001	2.4	75	16
TOTAL	330	100.00	87	0.001	0.0	83,049	40

* Hunter Days are based on all Upland Hunting.

* The Total Active Hunter value is NOT the true Provincial Total.

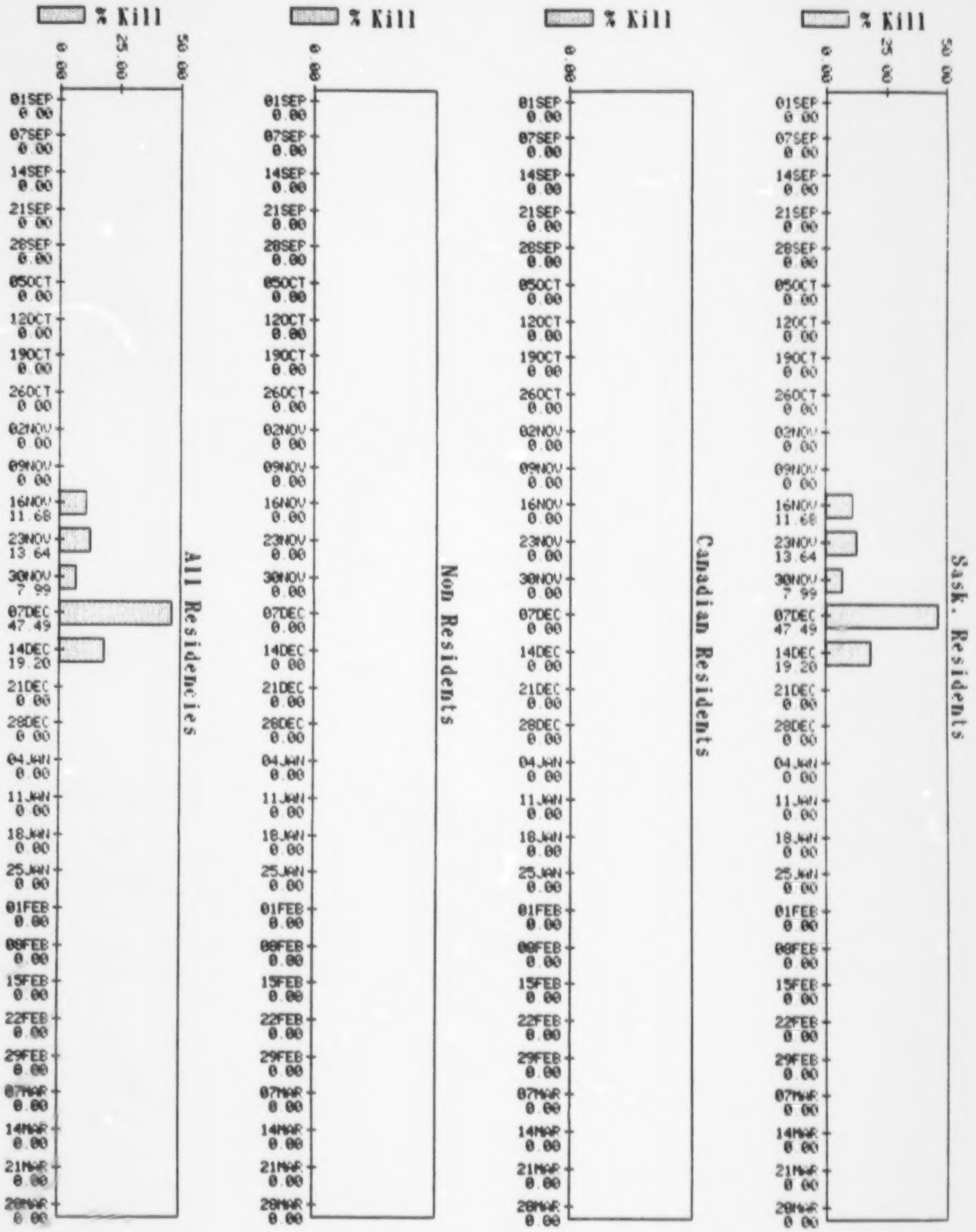


Figure 32. Saskatchewan 1987 ptarmigan harvest by weekly intervals.

Appendix 1. 1987 Big Game Hunting Season Regulations

1987 Big Game Seasons

Species	Wildlife Management Zones Open	Season Dates (Inclusive)	Limit	Additional Information
White-tailed Deer Primitive Weapons (Sask Residents Only)	Zones 1 to 8, 11 to 55, including Elbow Fort a la Corne, Great Bend and Horsehide Lake Wildlife Management Units, Duck Mountain, Moose Mountain and Saskatchewan Landing Prov Parks	Archery Sept 7 - Oct 17 Muzzleloading Rifles Oct 5 - Oct 17	one white-tailed deer either sex	– An unsuccessful archer or muzzleloader hunter may use his unfilled either sex white-tailed deer licence in all white-tailed deer rifle seasons and the Shotgun-Archery-Muzzleloader areas of Zones 20 and 30 – Archery and muzzleloader hunters have the option to purchase an antlerless white-tailed deer licence in addition to their either-sex licence, valid only in the specified portion of Zones 11 and 14 during the archery and muzzleloader seasons. See map on page 12 for details – Second white-tailed deer either-sex licences are valid only in Zones 56 to 61 and 66 to 69. A separate licence is required **Note: The opening date in Duck Mountain, Greenwater, Meadow Lake and Saskatchewan Landing Provincial Parks and Bronson Forest Recreation Site is delayed until Sept. 9.**
	Zones 9 and 10	Archery Sept 21 - Oct 3 Muzzleloading Rifles Oct 5 - Oct 17	one white-tailed deer either sex	
	That portion of Zones 11 and 14 along the South Saskatchewan River from Highway No 21 to the Alberta border	Archery Sept 7 - Oct 17 Muzzleloading Rifles Oct 5 - Oct 17	one antlerless white-tailed deer	
	Zones 56 to 61 and 66 to 69, including Leaf Lake Wildlife Management Unit, Greenwater and Meadow Lake Provincial Parks and Bronson Forest Recreation Site	Archery Sept 7 - Oct 17 Muzzleloading Rifles Sept 21 - Oct 17	two white-tailed deer either sex	
	Zones 62 to 65, and 70 to 76 including Clearwater River, Lac La Ronge and Nipawin Provincial Parks	Archery Sept 7 - Oct 17 Muzzleloading Rifles Sept 21 - Oct 17	one white-tailed deer either sex	
White-tailed Deer Archery (Canadian Residents and Non-residents)	Zones 56 to 76, including Leaf Lake Wildlife Management Unit, Clearwater River, Greenwater, Lac La Ronge, Meadow Lake and Nipawin Provincial Parks, and Bronson Forest Recreation Site	Sept 7 - Oct 17	one white-tailed deer, either sex	– An unsuccessful archer may use his unfilled either sex white-tailed deer licence in all white-tailed deer seasons open to Canadian Residents and Non-residents
White-tailed Deer (Sask Residents, Canadian Residents and Non-residents)	Zones 56 to 61, 66 and 69, including Leaf Lake Wildlife Management Unit, and Greenwater and Meadow Lake Prov Parks	Oct 5 - Oct 17 and Nov 9 - Nov 28	two white-tailed deer either sex	– Second white-tailed deer licences are valid only in Zones 56 to 61 and 66 to 69. A separate licence is required
	Zones 67 and 68, including Bronson Forest Recreation Site	Nov 9 - Nov 28	two white-tailed deer either sex	
	Zones 62 to 65, including Nipawin Provincial Park	Nov 9 - Nov 28	one white-tailed deer either sex	
	Zones 70 to 76, including Clearwater River and Lac La Ronge Provincial Parks	Nov 2 - Nov 28	one white-tailed deer either sex	
White-tailed Deer (Sask Residents and Canadian Residents)	Zones 1 to 15, 18 to 30, 36 and 40 to 55, including Brokenshell No 1 and No 2, Cookson, Estevan-Cambria, Elbow, Fort a la Corne, Horsehide Lake, Last Mountain Lake and Lomond No 3 (at Maxim) Wildlife Management Units, and Saskatchewan Landing Provincial Park	Sask Residents Nov 16 - Nov 28 Canadian Residents Nov 23 - Nov 28	one white-tailed deer, either sex	**Note: Primitive weapons only in Saskatchewan Landing Provincial Park.** – **Portions of Zones 20 and 30 are restricted to shotgun, archery, and muzzleloading rifle hunting only. Please refer to Wildlife Management Zone maps.** – **Hunters will be restricted to designated trails within the Cookson Wildlife Management Unit.** – **"Roads and Trails Only". Hunters in Zones 15 to 17, 20 and 30 to 34 must keep vehicles on roads and road allowances with trails.** – "Antlered White-tailed Deer" means any deer with an antler or antlers at least 10 centimetres in length as measured from the outside of the skull to the tip – Hunters may purchase an antlerless white-tailed deer licence at department offices upon proof of possession of a mule deer licence for Zone 6 or an antlerless mule deer licence for Zone 2 – "Antlerless White-tailed Deer" means a doe or 1987 fawn
	Zones 16, 17 and 31 to 35, including Moose Mountain Provincial Park	Sask Residents Nov 16 - Nov 28	one white-tailed deer, either sex	
	Zone 38	Sask Residents Nov 16 - Nov 28	one antlered white-tailed deer	
	Zones 37 and 39, including Duck Mountain Provincial Park	Sask Residents Nov 16 - Nov 21	one antlered white-tailed deer	
		Sask Residents Nov 23 - Nov 28	one white-tailed deer, either sex	
	Zones 2 and 6 (Zone 2 — Antlerless mule deer licence holders only, licence valid east of Highway No 4) (Zone 6 — Either sex and antlerless mule deer licence holders)	Various mule deer seasons between Nov. 2 and Nov 14 inclusive	one antlerless white-tailed deer	
White-tailed Deer with Guided Moose (Persons holding valid white-tailed deer licences and possessing guided moose licences)	Zones 60 and 61	Oct 5 - Oct 24 and Nov 2 - Nov 7	two white-tailed deer, either sex	– Services of a registered guide must be used
	Zone 62	Oct 5 - Oct 24 and Nov 2 - Nov 7	one white-tailed deer either sex	
	Zone 69	Sept 7 - Sept 19 and Nov 2 - Nov 7	two white-tailed deer, either sex	
	Zones 70 to 76, including Clearwater River and Lac La Ronge Provincial Parks	Sept 7 - Sept 19 and Oct 5 - Oct 17	one white-tailed deer either sex	

Regular Elk (Sask Residents Only)	Zones 48, 49, 50 (North of Highway 55), 56 to 64, 66 and 69, including Leaf Lake Wildlife Management Unit and the northeast portion of Meadow Lake Provincial Park north of the 17th base line	Sept 14 - Sept. 26	one antlered elk	– "Antlered Elk" means any elk having an antler or antlers at least 15 centimetres in length as measured from the outside of the skull to the tip **Note: Watch for signs in Meadow Lake Provincial Park.** **Note: Hunters will be restricted to designated trails within the Cookson Wildlife Management Unit.**
	Zone 53, including Cookson Wildlife Management Unit	Nov. 23 - Dec. 12	one elk, either sex	
Regular Moose (Sask. Residents Only)	Zones 43, 48, 49, 53, 56 to 67 and 69, including Cookson and Leaf Lake Wildlife Management Units; and Nipawin Provincial Park	Oct 5 - Oct 10	one bull or one 1987 calf moose	– "Bull Moose" means a male moose one or more years old. "Calf Moose" means any moose born in 1987. "Cow Moose" means a female moose one or more years old – Successful applicants for a special moose licence are not eligible to purchase a regular moose licence – The antlers of bull moose and the lower jaw of calf moose must accompany the carcass
Early Season	Zones 70 to 73, including Clearwater River and Lac La Ronge Provincial Parks	Aug. 31 - Sept. 19	one bull or one 1987 calf moose	
	Zones 74, 75 and 76	Aug. 31 - Oct. 10	one bull or one 1987 calf moose	
Late Season	Zones 43, 48, 49 and 56 to 59, including Leaf Lake Wildlife Management Unit	Nov 16 - Nov 28	one bull or one 1987 calf moose	
	Zones 53, 55 and 60 to 69, including Cookson Wildlife Management Unit, Nipawin Provincial Park and Bronson Forest Recreation Site	Nov 16 - Nov 21	one bull or one 1987 calf moose	
	Zones 70 to 73, including Clearwater River and Lac La Ronge Provincial Parks	Nov. 2 - Nov. 28	one bull or one 1987 calf moose	
Guided Moose (Canadian Residents and Non-residents)	Zones 60, 61 and 62	Oct 5 - Oct. 24 and Nov. 2 - Nov. 21	one bull or one 1987 calf moose	– The antlers of bull moose and the lower jaw of calf moose must accompany the carcass
	Zone 69	Sept 7 - Sept 19, Oct 5 - Oct 10 and Nov. 2 - Nov. 21	one bull or one 1987 calf moose	– Services of a registered guide must be used
	Zones 70 to 76, including Clearwater River and Lac La Ronge Provincial Parks	Sept. 7 - Sept 19, Oct 5 - Oct. 17 and Nov 2 - Nov 28	one bull or one 1987 calf moose	– 400 Guided Moose Licences are available directly from outfitters. Quotas (in brackets) for each zone: 60(60), 61(115), 62(15), 69(15), 70(10), 71(45), 72(45), 73(10), 74(45), 75(10), 76(30)
Woodland Caribou	The woodland caribou season is closed for 1987. The department is continuing to investigate caribou populations and factors contributing to their low numbers. Upon completion of this study, the future of woodland caribou hunting in the province will be reviewed			
Barren-ground Caribou (Sask Residents of Zone 76 only)	Zone 76	Nov 16 - Mar 31, 1988	two barren-ground caribou, either sex, separate licences required	– "Resident of Zone 76" means a Saskatchewan resident who has lived in Zone 76 for three months immediately preceding the date of licence purchase
Bear (Sask Residents, Canadian Residents and Non-residents)	Zones 37, 42, 43 and 48 to 76, including Cookson, Horsehide Lake and Leaf Lake Wildlife Management Units	Aug 24 - Oct. 17	two bear, either sex; separate licences required	– Unused spring bear licences are valid in the fall season **Note: A person hunting in Zones 58 to 61 during an August, September or October big game season may obtain two free bear seals. One bear, either sex, can be taken per seal while hunting under a valid big game licence. Once the big game licence has been filled, the free bear seals are no longer valid.** – Zones 58 to 61 free bear seals are available at department offices only
	Clearwater, Lac La Ronge, Meadow Lake, Nipawin and Duck Mountain Provincial Parks, and Bronson Forest Recreation Site	Sept 8 - Oct 17	two bear, either sex, separate licences required	
	Fort a la Corne Wildlife Management Unit only	Sept. 21 - Oct. 17	two bear, either sex, separate licences required	

1987 Special Big Game Seasons

Saskatchewan Residents Only By Application and Draw

Species	Wildlife Management Zones Open	Season Dates (Inclusive)	Limit	Additional Information
Antelope (tentative)	Zones 1 to 14, 19 and 23 to 26	Oct. 29 - Nov 14	one antelope, either sex	– Antelope licence quotas will be set after July aerial surveys
Antelope (Archery) (tentative)	Zones 1 to 15, 18, 19 and 23 to 26	Sept 7 - Oct 17	one antelope, either sex	– Antelope archery licences are valid in any open zone during the archery season only
Special Elk	Zone 6 and that portion of Zone 7 east of Highway No 271 and Grid Road No 615	Oct 19 - Oct 24	one elk, either sex	– Licence quotas (in brackets) for each zone 6 and the east portion of 7 combined (100), the west portion of 7(150), 33(100) 50(275), 48, 49, 56 and 57 combined (600), 59(50)
	That portion of Zone 7 west of Highway No 271 and Grid Road No 615, including Cypress Hills (West Block) Provincial Park	Oct 19 - Oct 24 or Oct 26 - Oct 31	one elk, either sex	
	Zone 33, including Moose Mountain Provincial Park	Oct 26 - Oct 31	one elk, either sex	
	That portion of Zone 50 south of Highway No 55, including Fort a la Corne Wildlife Management Unit	Aug 31 - Sept 19 and Nov 2 - Nov 14	one elk, either sex	
	Zones 48, 49, 56 and 57, including Greenwater Provincial Park	Oct 19 - Oct 24	one elk, either sex	
	Zone 59	Oct 19 - Oct 24	one elk, either sex	
Special Moose	Zone 6	Oct 26 - Oct 31	one moose, either sex	– Licence quotas (in brackets) for each zone 6(25), 37(100), 50(100), 54(100) 48, 49 and 56 combined (300), 57(200) 58(200), 59(400), 60(200), 61(100), 62(50), 67(150), 55 and 68 combined (150), Greenwater Provincial Park (50) **Note: Some portions of the Meeting and Royal Lake PFRA Pastures in Zone 54 will be closed to moose hunting. Watch for "No Hunting" signs.**
	Zones 48, 49, 56, 57 to 62 and 67, including Leaf Lake Wildlife Management Unit	Sept 14 - Sept 19 and Nov 2 - Nov 14	one moose, either sex	
	Zones 55 and 68, including Bronson Forest Recreation Site	Nov 2 - Nov 14	one moose, either sex	
	Zone 37, including Duck Mountain Provincial Park	Nov 2 - Nov 14	one moose, either sex	
	Greenwater Provincial Park Only	Nov 2 - Nov 14	one moose, either sex	
	Zone 50, including Fort a la Corne Wildlife Management Unit	Sept 14 - Sept 26 and Nov 2 - Nov 14	one moose, either sex	
	Zone 54	Nov 9 - Nov 14	one moose, either sex	
Moose (Archery)	Zones 37, 55 and 68, including Duck Mountain Provincial Park and Bronson Forest Recreation Site	Sept 14 - Sept 26	one moose, either sex	– Archery moose licences valid only during the archery season, licence quotas (in brackets) for each zone 37(50), 55 and 68 combined (100)
Mule Deer	Zones 1, 3 to 8, 11, 12, 19, 23 to 27, 29, 30 and 45, including Elbow Wildlife Management Unit and Cypress Hills (West Block) Provincial Park	Nov. 2 - Nov 7	one mule deer, either sex	– Licence quotas (in brackets) for each zone 1(250), 2(900), 3(150), 4(150) 5(200), 6(300), 7(150), 8(50), 9(500) 10(800), 11(50), 12(100), 13(600) 14(800), 19(250), 23(250), 24(250) 25(150), 26(200), 27(150), 29(150) 30(150), 45(100), 46(200) **Note: Primitive weapons only in Saskatchewan Landing Provincial Park**
	Zone 46	Nov 9 - Nov 14	one mule deer, either sex	
	Zones 2, 9, 10, 13 and 14, including Saskatchewan Landing Provincial Park	Nov. 2 - Nov 5 or Nov 6 - Nov 10	one mule deer, either sex	
Antlerless Mule Deer	Zones 1, 4, 6, 7, 8, 11, 12, 19 and 23, including Cypress Hills (West Block) Provincial Park	Nov 9 - Nov 14	one antlerless mule deer	– Licence quotas (in brackets) for each zone 1(250), 2(200), 4(150), 6(200) 7(200), 8(100), 9(100), 10(600), 11(100) 12(200), 19(250), 23(250)
	Zones 2, 9 and 10	Nov 11 - Nov 14	one antlerless mule deer	– "Antlerless Mule Deer" means a doe or a 1987 fawn **Note: Primitive weapons only in Saskatchewan Landing Provincial Park**

Species	Wildlife Management Zones Open	Season Dates (Inclusive)	[illegible]	Information
Mule Deer (Archery)	Zones 1 to 8, 13, 14, 18 to 27, 29, 30, 45 and 46, including Elbow Wildlife Management Unit, and Saskatchewan Landing and Cypress Hills (West Block) Provincial Parks	Sept. 7 - Oct. 17	one mule deer, either sex	– Licence quotas (in brackets) for each zone: 1 to 8, 13, 14, 18 to 27, 29, 30, 45 and 46 combined (800), 9 and 10 combined (150), 12(50). Archery licences valid only in the archery season. **Note: The opening date in Saskatchewan Landing and Cypress Hills (West Block) Provincial Parks is delayed until Sept. 9.**
	Zones 9, 10 and 12	Sept. 21 - Oct. 3	one mule deer, either sex	
Antlerless Mule Deer (Archery)	Zones 1 to 8, 13, 14, 18 to 27, 29, 30, 45 and 46, including Elbow Wildlife Management Unit; and Saskatchewan Landing and Cypress Hills (West Block) Provincial Parks	Sept. 7 - Oct. 17	one antlerless mule deer	– Licence quotas (in brackets) for each zone: 1 to 8, 12, 13, 14, 18 to 27, 29, 30, 45 and 46 combined (100), 9 and 10 combined (50). **Note: The opening date in Saskatchewan Landing and Cypress Hills (West Block) Provincial Parks is delayed until Sept. 9.**
	Zones 9, 10 and 12	Sept. 21 - Oct. 3	one antlerless mule deer	
Mule Deer (Muzzleloading Rifles)	Zones 1 to 10, 13, 14, 18 to 27, 29, 30, 45 and 46, including Elbow Wildlife Management Unit, and Saskatchewan Landing and Cypress Hills (West Block) Provincial Parks	Oct. 5 - Oct. 17	one mule deer, either sex	– Licence quotas (in brackets) for each zone: 1 to 8, 13, 14, 18 to 27, 29, 30, 45 and 46 combined (100), 9 and 10 combined (50)
Antlerless Mule Deer (Muzzleloading Rifles)	Zones 1 to 10, 13, 14, 18 to 27, 29, 30, 45 and 46, including Elbow Wildlife Management Unit; and Saskatchewan Landing and Cypress Hills (West Block) Provincial Parks	Oct. 5 - Oct. 17	one antlerless mule deer	– Licence quotas (in brackets) for each zone: 1 to 8, 13, 14, 18 to 27, 29, 30, 45 and 46 combined (100), 9 and 10 combined (50)

Saskatchewan Parks, Recreation and Culture

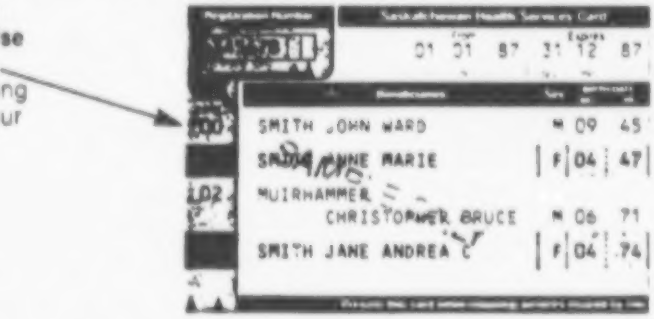
Hon. Colin Maxwell
Minister

1987 Saskatchewan Big Game Draw Information Sheet

(Residents of Saskatchewan Only)

1. Applicants will only be accepted on 1987 application envelopes.
2. Only Saskatchewan residents may apply for Big Game Draw licences. Applications from persons aged 15 or younger will not be accepted, with the exception of persons 12 to 15 years of age in the Special Antlerless Mule Deer seasons (see Mule Deer section for more details). For all other species, applicants must be 16 before July 7, 1987.
3. Persons **17 years of age and younger and all first time hunters** must hold a Firearm or Hunter Safety Certificate before applying.
4. **Deadline:** Applications must be received at the SPRC office, 3211 Albert Street, Regina, no later than 5:00 p.m. C.S.T., Tuesday, **July 7, 1987** to be eligible. Post office date stamps are not acceptable.
5. No person shall submit an application if their hunting rights are still restricted for either a Wildlife Act conviction or a firearm accident as of July 7, 1987.
6. Each applicant **must** list their full registration and beneficiary number from their 1987 Saskatchewan Health Services Card. **Do not use** Health Region, MSI or GMS card numbers. Print your registration number first, followed by **your individual** beneficiary number in this manner: 345678-00 (see sample SHS Card). Permanent members of the Armed Forces use their Social Insurance Number. RCMP use their regimental number. Mark the appropriate box on the application.

Each person on this card has a separate beneficiary number. **Use your own beneficiary number** (adjacent to your name) following your registration number on your application.


Registration Number
Saskatchewan Health Services Card
From
Expires
Beneficiaries
Sex

01 01 87 31 12 87

001 SMITH JOHN WARD M 09 45
SMITH ANNE MARIE F 04 47
102 MUIRHAMMER CHRISTOPHER BRUCE M 06 71
SMITH JANE ANDREA C F 04 74

7. Complete your application form, printing your name **exactly** as it appears on your SHS Card. Be sure to **complete both sides** of the application.
8. **Applications will be rejected** for any of the following reasons:
   - — no licence fees, incorrect fees or unsigned cheques enclosed;
   - — containing false or incomplete information;
   - — containing special instructions;
   - — containing ineligible names;
   - — having a persons name appear on more than one application envelope for a particular species.

   Note: Supplying false or misleading information is a violation of The Wildlife Act.
9. A person may apply only **once** for each species. Elk, Moose, or Antelope (either archery or rifle — **not both**). Applicants applying for Mule Deer may apply for both Either-sex Mule Deer and Antlerless Mule Deer. See the Mule Deer section for further details. Please print the species in the appropriate box on the application form. A separate application is required for each species.
10. Each application must be signed by one of the applicants. This person is responsible for the validity of the information provided.
11. Successful applicants for a Special Elk licence are **not** eligible to purchase a Regular Elk licence. Successful applicants for a Special Moose licence are **not** eligible to purchase a Regular Moose licence.

12. **Licence Fees:** Licence fees have increased for the 1987 hunting seasons. In addition to purchasing your big game licence, **all successful** applicants must purchase a Saskatchewan Wildlife certificate to validate their licence. This certificate is available from any licence vendor at a cost of $10.00.

The licence fee structure for 1987 is:

Moose	$50.00	Antelope	$35.00
Elk	$50.00	Mule Deer (Either-sex and Antlerless)	$35.00

13. **Priority Pools:** The following priority pools apply to all species and seasons:
"Super A" — applications listing applicants who qualified for Pool "A" **and applied** in 1986 but were not drawn for that species (1st priority);
"A" — applications listing persons who did not have a licence for a particular species (either archery or rifle) in 1985 or 1986 (2nd priority);
"B" — applications listing persons who obtained a licence (either archery or rifle) in 1985 (3rd priority);
"C" — applications listing persons who had a licence (either archery or rifle) in 1986 (4th priority).

Please note: Applications will receive the lowest priority of any applicant on the application. For example, if you apply on the same application with a person who was drawn for that species in 1985, your application will go into Pool "B".

14. **Zone Preference:** You may select from one to six management zones. List them in order of preference in boxes 1 to 6 by writing in the zone numbers. **CHECK THE MAP ON THE INSIDE PAGE (PAGE 5).**

15. **Split Seasons:** Applicants will have no choice of season dates in zones where split seasons are offered. If you are not willing to hunt in either of the split seasons, apply only for zones where split seasons do not occur.

16. **Antlerless Mule Deer Season:** Persons applying for Antlerless Mule Deer in 1987 may apply separately without going through the Either-sex Mule Deer draw first. Write the words "Antlerless Mule Deer" in the space provided for species on the application envelope. Please read the information outlined in the Mule Deer section for further details.

17. **Muzzleloading Mule Deer Season:** A muzzleloading Mule Deer season will again be offered for 1987. This season will be for Either-sex and Antlerless Mule Deer. Persons apply by checking the muzzleloader box on the application envelope and writing in the species either "Mule Deer" or "Antlerless Mule Deer".

18. **Archery Season:** Place an "X" in the box marked "archery" if you are applying for the Antelope, Mule Deer, Antlerless Mule Deer or Moose Archery seasons; otherwise leave blank.

Note: Mule Deer applicants must list their zone preference on the application. Archery licences are valid only during the archery season.

19. Should you require additional information, please contact your nearest Saskatchewan Parks, Recreation and Culture office.

For further help in filling out your application, check the example on the back page.

Results of the Big Game Draw will be available on August 17, 1987. The information number is 787-9246. Phone lines will be open from 9:00 a.m. to 9:00 p.m. on August 17, 18 and 19; and from 9:00 a.m. to 5:00 p.m. weekdays after August 19. Collect calls will not be accepted.

TENTATIVE SEASON DATES (INCLUSIVE) AND TENTATIVE LICENCE QUOTAS (IN BRACKETS)

Remember, six zone choices are available on each application.
Licences in combined zones will be valid in all zones designated.

ELK

SPECIAL ELK SEASON (either sex) Fee $50.00

Aug. 31 - Sept. 19 & Nov. 2 - Nov. 14	Zone 50, south of Highway No. 55, including Fort a la Corne Wildlife Management Unit (275 licences).
Oct. 19 - Oct. 24	Combined Zones 48, 49, 56 and 57, including Greenwater Provincial Park (600 licences). * Designate Zone 48 for the combined Zones 48, 49, 56 and 57.
Oct. 26 - Oct. 31	Zone 33, including Moose Mountain Provincial Park (100 licences).
Oct. 19 - Oct. 24 split season Oct. 26 - Oct. 31	Zone 7, west of Highway No. 271 and Grid Road No. 615 including Cypress Hills (West Block) Provincial Park (150 licences).
Oct. 19 - Oct. 24	Combined Zones 6 and 7, east of Highway No. 271 and Grid Road No. 615 (100 licences). * Designate Zone 6 for combined Zones 6 and 7.
Oct. 19 - Oct. 24	Zone 59 (50 licences).

MOOSE

SPECIAL MOOSE SEASON (either sex) Fee: $50.00

Sept. 14 - Sept. 19 & Nov. 2 - Nov. 14	Combined Zones 48, 49 and 56, Zones 57 to 62, and Zone 67, including Leaf Lake Wildlife Management Unit. * Designate Zone 48 for combined Zones 48, 49, and 56.
Nov. 2 - Nov. 14	Combined Zones 68 and 55, including Bronson Forest Recreation Site * Designate Zone 68 for the combined Zones 68 and 55.
Nov. 2 - Nov. 14	Zone 37, including Duck Mountain Provincial Park.
Nov. 2 - Nov. 14	Zone 56G, Greenwater Provincial Park only. * Designate 56G, for Greenwater Provincial Park.
Sept. 14 - Sept. 26 & Nov. 2 - Nov. 14	Zone 50, including Fort a la Corne Wildlife Management Unit.
Oct. 26 - Oct. 31	Zone 6.
Nov. 9 - Nov. 14	Zone 54

Zone Moose Quotas

Zone 6 -	(25)	Zone 59 -	(400)
Zone 37 -	(100)	Zone 60 -	(200)
Zone 54 -	(100)	Zone 61 -	(100)
Zones 48, 49 & 56 -	(300)	Zone 62 -	(50)
Zone 57 -	(200)	Zone 67 -	(150)
Zone 58 -	(200)	Zones 68 & 55 -	(150)

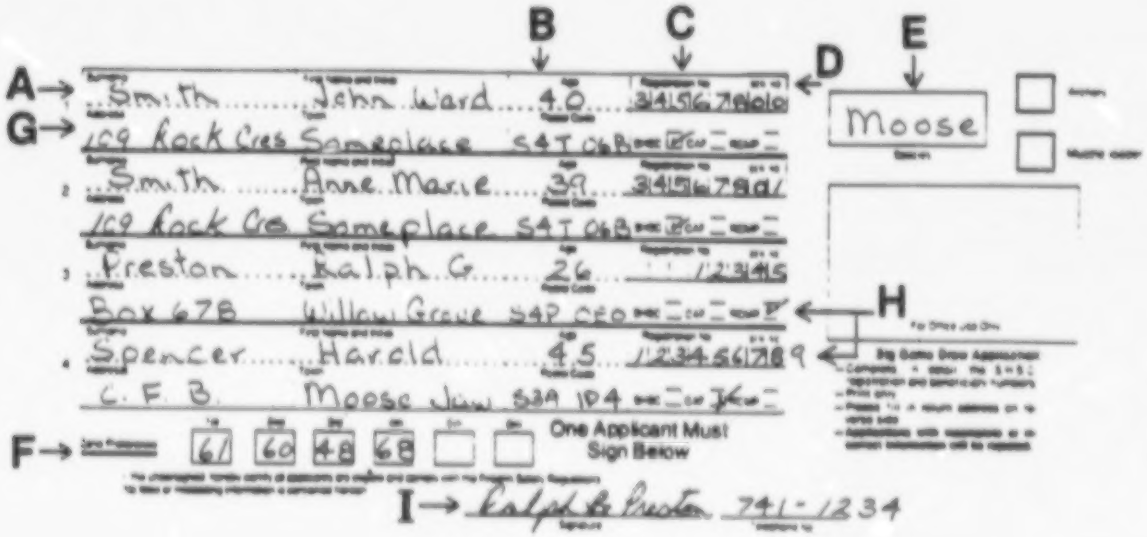
Zone 50, including Fort a la Corne Wildlife Management Unit - (100)
Zone 56G, Greenwater Provincial Park only - (50)

ARCHERY MOOSE SEASON (either sex) Fee: $50.00

Sept. 14 - Sept. 26	Zone 37 including Duck Mountain Provincial Park (50 licences). Combined Zones 68 and 55, including Bronson Forest Recreation Site (100 licences). * Designate Zone 68 for combined Zones 68 and 55.

SAMPLE BIG GAME DRAW APPLICATION

Applying for the Big Game Draw is not difficult. The department requires basic information to enter you in the draw: who you are, where you live, what species you want to hunt and where. Follow the example below when filling out your application envelope. **Remember, applications with incomplete or incorrect information will be rejected.**



1 Smith John Ward 40 34567800
169 Rock Cres Sameplace S4T 06B

2 Smith Anne Marie 39 34567801
169 Rock Cres Sameplace S4T 06B

3 Preston Ralph G 26 12345
Box 678 Willow Grove S4P 0E0

4 Spencer Harold 45 123456789
C. F. B. Moose Jaw S3A 1D4

Moose

61 60 48 68

One Applicant Must Sign Below

Ralph G. Preston 741-1234

A. Write down your name so we know who is applying. With your last name first, print your name exactly as it appears on your Saskatchewan Health Services Card. **Do not use nicknames.**

B. Enter your correct age.

C. Be sure you have written your SHS card number correctly. This number verifies that you are a Saskatchewan resident and is used to confirm when you last held a draw licence.

D. Remember to use your beneficiary number. This number is found to the left of your name on your Saskatchewan Health Services Card.

E. Tell us the species you want to hunt: Elk, Moose, Mule Deer, Antlerless Mule Deer (see Mule Deer section), or Antelope.

F. Where would you like to hunt? You can apply for one zone or as many as six. If your application is selected, the computer will look at your first choice. If the quota for that zone is filled before your application is picked, the computer will select your second choice, and so on.

G. Include your correct mailing address so your licence can be sent to you.

H. If you are a member of the RCMP or the Armed Forces, follow this example for entering your number. RCMP use their Regimental number, Armed Forces use their Social Insurance Number.

I. Make sure one of the applicants signs the application to verify it is correct. Include your phone number; we may want to get in touch with you to clarify the information.

Remember to include in the application envelope a cheque or money order for the correct amount, covering the licence fees of all applicants.

ANTELOPE

ANTELOPE SEASON (either sex) Fee $35.00

Oct 29 - Nov 14 — Zones 1 to 14, 19, 23 to 26

Combined Zones: 2 and 5, 8 and 11, 12 and 13, 19 and 23.

- Designate Zone 2 for combined Zones 2 and 5
- Designate Zone 8 for combined Zones 8 and 11
- Designate Zone 12 for combined Zones 12 and 13
- Designate Zone 19 for combined Zones 19 and 23

Antelope quotas will be set after the July surveys have been completed. If an antelope season is held, licences will be issued on a zone basis. List zone preference on application.

ARCHERY ANTELOPE SEASON (either sex) Fee $35.00

Sept 7 - Oct 17 — Combined Zones 1 to 15, 18, 19, 23 to 26

- Designate Zone 1 for combined Zones 1 to 15, 18, 19, 23 to 26

MULE DEER

Please read the following information carefully concerning Mule Deer. The 1987 Mule Deer season will consist of a regular rifle season, a muzzleloading rifle season and an archery season. Each one of these seasons will include an **Either-sex** hunt and an **Antlerless** hunt.

Hunters may apply for **only one** of the either sex seasons for rifle, muzzleloading rifle or archery.

Hunters may continue to apply separately for Antlerless Mule Deer. Applications are not required to go through the Either sex draw first as in previous years. Applicants may apply for **only one** of the Antlerless seasons for rifle, muzzleloading rifle or archery.

Hunters have the option of applying for Either-sex, Antlerless or both. However, those hunters who apply for both will be eliminated from the Antlerless draw if successfully drawn in an Either-sex season.

Hunters may apply for any combination of seasons but **can only apply for one Either-sex season and one Antlerless season.**

Hunters applying for Zone 6 Either-sex and or Antlerless Mule Deer and Zone 2 Antlerless Mule Deer: again, as in 1986, successful applicants for these species in these zones have the opportunity to purchase an additional licence to harvest an Antlerless White-tailed Deer. This additional hunting opportunity is part of an effort to reduce the number of deer and [illegible] the growing whitetail population in these zones while limiting the number of licences available.

The Antlerless White-tailed Deer licence is valid only during the Either sex or Antlerless Mule Deer seasons in Zone 6 and during the Antlerless Mule Deer season in Zone 2. For example, successful applicants for Zone 6 Mule Deer may purchase an Antlerless White-tailed Deer licence valid only in Zone 6 during the Mule Deer season for which they have been drawn. **Zone 2 Antlerless White-tailed Deer licences are valid east of Highway Number 4 only.**

The Antlerless White-tailed Deer licence will be available at Saskatchewan Parks, Recreation and Culture offices only. The licence fee is $[illegible].

MULE DEER

Rifle

MULE DEER SEASON [illegible] Fee $[illegible]

Apply by printing "**Mule Deer**" in the space provided on the application envelope.

[illegible] — Zone quotas [illegible]

Zones [illegible] — Zone 2 [illegible] Zone 9 [illegible]

split season — and 11 including [illegible] — Zone 10 [illegible]

Saskatchewan Landing — Zone 13 [illegible] Zone 14 [illegible]

Provincial Park

*Note: Zone 13 and 14 Mule Deer hunters who wish to hunt in Saskatchewan Landing Provincial Park may hunt with primitive weapons only.

[illegible] — Zones 1 to [illegible] 8, 11, 12, 19, 23 to 27, 29, 30 and 45, including Elbow Wildlife Management Unit and Cypress Hills (West Block) Provincial Park

[illegible] — Zone 46

Zone Mule Deer Quotas

[illegible]	[illegible]	Zone 7	[illegible]	Zone 13	(800)	Zone [illegible]	[illegible]
[illegible]	[illegible]	Zone 8	[illegible]	Zone 14	(800)	Zone [illegible]	[illegible]
[illegible]	[illegible]	Zone 9	[illegible]	Zone 19	(250)	Zone [illegible]	[illegible]
Zone [illegible]	[illegible]	Zone 10	(800)	Zone 23	(250)	Zone 30	[illegible]
Zone [illegible]	[illegible]	Zone 11	(50)	Zone 24	(250)	Zone 45	[illegible]
Zone [illegible]	[illegible]	Zone 12	(100)	Zone 25	(150)	Zone 46	[illegible]

Muzzleloading

MUZZLELOADING RIFLE MULE DEER (1 deer either sex) Fee $35.00

Apply by printing "**Muzzleloading Mule Deer**" in the space provided on the application envelope.

Oct [illegible] - Oct 17 — Combined Zones 1 to 8, 13, 14, 18 to 27, 29, 30, 45 and 46, including Elbow Wildlife Management Unit, and Saskatchewan Landing and Cypress Hills (West Block) Provincial Parks (100 licences)

- Designate Zone 1 for combined Zones 1 to 8, 13, 14, 18 to 27, 29, 30, 45 and 46

Combined Zones 9 and 10 (50 licences)

- Designate Zone 9 for combined Zones 9 and 10

[illegible] Mule Deer licence is valid only during the Muzzleloading season.

Archery

ARCHERY MULE DEER (1 deer either sex) Fee $35.00

Apply by printing "**Mule Deer**" **in the space provided and mark the archery box** on the application envelope.

Sept [illegible] - Oct 17 — Combined Zones 1 to 8, 13, 14, 18 to 27, 29, 30, 45 and 46, including Elbow Wildlife Management Unit, and Saskatchewan Landing and Cypress Hills (West Block) Provincial Parks (800 licences)

- Designate Zone 1 for combined Zones 1 to 8, 13, 14, 18 to 27, 29, 30, 45 and 46

Sept [illegible] - Oct [illegible] — Combined Zones 9 and 10, and Zone 12

- Designate Zone 9 for combined Zones 9 and 10
- Designate Zone 12 for Zone 12

Licence Quotas

Combined Zones 9 and 10 - (150 licences)

Zone 12 - [illegible] licences)

ANTLERLESS MULE DEER

Again, as in 1986, Antlerless Mule Deer will be treated as a separate species. Hunters may apply for Antlerless Mule Deer separately, without going through the Either-sex Mule Deer draw first as in previous years. Hunters may apply for **one** of the Antlerless seasons for rifle, muzzleloading rifle or archery.

Applicants also have the option of applying for one of the Either-sex seasons. However, those who apply for both the Either-sex and the Antlerless draw will have their application eliminated from the Antlerless draw if successful in the Either-sex draw. If you apply with different people on your Antlerless Mule Deer application than on your Either-sex Mule Deer application, all applicants will be eliminated from the Antlerless draw if you are drawn in the Either-sex season.

Note: All applicants must hold a valid Firearm Safety/Hunter Education certificate. Applicants 12 to 15 years of age must include in the application envelope written consent (on an SPRC consent form) from their parent or guardian to apply for and receive an Antlerless Mule Deer licence. Consent forms are available at SPRC, RCMP and Rural Municipality offices.

Definition of Antlerless Mule Deer: adult doe or a fawn born in 1987

Bag Limit: 1 Antlerless Deer

Pool Priority and Status:
Antlerless Mule Deer licences will be issued on a priority pool basis. Your priority for this species will be based on when you last held an Antlerless Mule Deer licence. Because Antlerless Mule Deer is treated as a separate species, being drawn for Antlerless will not affect your Either-sex Mule Deer status. Your status for Antlerless Mule Deer, if successfully drawn, will change to Pool 'C' in 1988.

Draw Procedure:
Remember — hunters interested in Antlerless Mule Deer may apply separately in 1987. Hunters have the option of applying for an Either-sex licence, an Antlerless licence or both. Applicants successfully drawn in the Either-sex draw who also applied for Antlerless Mule Deer will have their Antlerless application eliminated, including all persons on the application.

ANTLERLESS MULE DEER

Rifle

ANTLERLESS MULE DEER (1 deer, Antlerless only) Fee: $15.00
Apply by printing "**Antlerless Mule Deer**" in the space provided on the application envelope. Remember persons aged 12 to 15 may apply for Antlerless Mule Deer licences.

[illegible]	Zones 1, 4, 6, 7, 8, 11, 12, 19 and 23 including Cypress Hills (West Block) Provincial Park	No split season. Zone quotas listed below.
[illegible]	Zones 2, 9 and 10	

Zone Antlerless Mule Deer Quotas

Zone 1	[illegible]	Zone 6	(200)	Zone 9	(100)	Zone 12	[illegible]
Zone 2	[illegible]	Zone 7	(200)	Zone 10	(400)	Zone 19	[illegible]
Zone 4	[illegible]	Zone 8	(100)	Zone 11	(100)	Zone 23	[illegible]

Muzzleloading

MUZZLELOADING RIFLE ANTLERLESS MULE DEER (1 deer, Antlerless only) Fee: $15.00
Apply by printing "**Muzzleloading Antlerless**" in the space provided on the application envelope. Remember persons aged 12 to 15 may apply for Antlerless Mule Deer licences.

[illegible]	Combined Zones 1 to 8, 13, 14, 18 to 27, 29, 30, 45 and 46, including Elbow Wildlife Management Unit, and Saskatchewan Landing and Cypress Hills (West Block) Provincial Parks (100 licences) * Designate Zone 1 for combined Zones 1 to 8, 13, 14, 18 to 27, 29, 30, 45 and 46 Combined Zones 9 and 10 (50 licences) * Designate Zone 9 for combined Zones 9 and 10

*A Muzzleloading Antlerless Mule Deer licence is valid only during the Muzzleloading season.

Archery

ARCHERY ANTLERLESS MULE DEER SEASON (1 deer, Antlerless only) Fee: $15.00
Apply by printing "**Antlerless Mule Deer" in the space provided and mark the archery box** on the application envelope. Remember, persons aged 12 to 15 may apply for Antlerless Mule Deer licences.

[illegible]	Combined Zones 1 to 8, 13, 14, 18 to 27, 29, 30, 45 and 46, including Elbow Wildlife Management Unit, Saskatchewan Landing and Cypress Hills (West Block) Provincial Parks * Designate Zone 1 for combined Zones 1 to 8, 13, 14, 18 to 27, 29, 30, 45 and 46
[illegible]	Combined Zones 9 and 10 and Zone 12 * Designate Zone 9 for combined Zones 9 and 10 * Designate Zone 12 for Zone 12

Licence Quotas
Combined Zones 1 to 8, 13, 14, 18 to 27, 29, 30, 45 and 46 (100 licences)
Combined Zones 9 and 10 (50 licences)

Appendix 3. 1987 Big Game Hunter Questionnaire Survey

Saskatchewan
Parks, Recreation
and Culture
Minister
Game
Hunter

A Message from the Director of Wildlife

Fellow Sportsman

We are again asking for your support with the Big Game Hunter Survey

Please use the attached form to record your big game hunting activities. then mail the form in the enclosed postage paid envelope when you are finished hunting for the year

As a hunter you will be interested in the results of last year's survey The enclosed page which is yours to keep summarizes the 1986 big game harvest

This survey provides the information we need to set responsible quotas and season dates and ensures that the sportsmen of Saskatchewan will continue to enjoy recreational hunting opportunities in the future Because the names for the survey are selected randomly every year for statistical accuracy you may receive a questionnaire two or more years in a row

We greatly appreciate your assisting with the Big Game Hunter Survey By doing so, you contribute to better wildlife management in Saskatchewan

Hoping your 1987 hunting season is successful

Dennis Sherratt
Director
Wildlife Branch
Saskatchewan Parks, Recreation and Culture

1987 Big Game Hunter Survey

1 **If you did not purchase a 1987 Saskatchewan Big Game Licence please check ☑ here ☐ and return immediately. Thank You.**

2 If you **did** purchase a 1987 Saskatchewan Big Game Licence please fill out the following questionnaire, and return it upon the completion of your hunting.

3 **Please record all your hunting activities, whether or not you bagged an animal.**

- If you hunted less than a day, record as a full day (see sample)
- If you hunted in more than one zone, separate accordingly (see sample)

4 The number/alphabetical codes (ex. 01, 1R1, 2D1, etc.) are for office use only to permit computer analysis of the hunting information.

White-Tailed Deer (01)

Licences Purchased?

ANTLERLESS

Hunt Information

1st (Either Sex)

ZONE DAYS HUNTED

Archery (1A1)

Muzzleloader (1M1)

Rifle (1R1)

KILL ZONE Animal was (✓)

2nd (Either Sex)

ZONE DAYS HUNTED

Archery (1A2)

Muzzleloader (1M2)

Rifle (1R2)

KILL ZONE Animal was (✓) Buck Doe Fawn

Antlerless (WMZ 2, 6, 11 or 14 only) (1X1)

ZONE DAYS HUNTED

KILL ZONE Animal was (✓) Doe Fawn

Mule Deer (02)

Licences Purchased? Zone

Rifle Archery Muzzleloader

Hunt Information

Rifle (Either Sex) (2D1)

ZONE DAYS HUNTED

KILL ZONE Animal was (✓) Buck Doe Fawn

Rifle (Antlerless) (2X1)

ZONE DAYS HUNTED

KILL ZONE Animal was (✓) Doe Fawn

Archery (Either Sex) (2A1)

ZONE DAYS HUNTED

KILL ZONE Animal was (✓) Buck Doe Fawn

Archery (Antlerless) (2B1)

ZONE DAYS HUNTED

KILL ZONE Animal was (✓) Doe Fawn

Muzzleloading (Either Sex) (2M1)

ZONE DAYS HUNTED

KILL ZONE Animal was (✓) Buck Doe Fawn

Muzzleloading (Antlerless) (2N1)

ZONE DAYS HUNTED

KILL ZONE Animal was (✓) Doe Fawn

Moose (03)

Licences Purchased?

Regular Bull Calf

Special

Hunt Information

Regular (Bulls & Calves Only) (3R1)

ZONE DAYS HUNTED

KILL ZONE Animal was (✓)

Special (Either Sex) (3D1)

ZONE DAYS HUNTED

KILL ZONE Animal was (✓)

Archery (Either Sex) (3A1)

ZONE DAYS HUNTED

KILL ZONE Animal was (✓)

Nº 27225

5. Sample

White-Tailed Deer (01)

Licences Purchased?

1st Either sex	2nd Either sex	ANTLERLESS (WMZ 2, 6, 11 or 14)
☑	☐	☐

Hunt Information

1st (Either Sex) (1R1)

	ZONE	DAYS HUNTED
Archery	31	1
Muzzleloader	32	3
Rifle	31	2
	32	1

Animal was (✓)

KILL ZONE 32 Buck Doe Fawn ✓

6. 1987 Calendar

APRIL						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

MAY						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

JUNE						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

AUGUST						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

SEPTEMBER						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

OCTOBER						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

NOVEMBER						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

DECEMBER						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Antelope (04)

Licences Purchased?

Rifle	Archery	Free
☐	☐	☐

Hunt Information

Rifle (4D1)

DATE	ZONE	DAYS HUNTED
Oct 29-Oct 31	☐	☐
Nov 2-Nov 7	☐	☐
Nov 9-Nov 14	☐	☐

Animal was (✓)

KILL ZONE Buck Doe Fawn

Archery (4A1)

ZONE	DAYS HUNTED
☐	☐
☐	☐
☐	☐

Animal was (✓)

KILL ZONE Buck Doe Fawn

Elk (05)

Licences Purchased?

Regular Bulls Only, Either Sex (WMZ 53)	Special Draw Either Sex
☐	Zone ☐

Hunt Information

Regular (Bulls Only) (5R1)

ZONE	DAYS HUNTED
☐	☐
☐	☐
☐	☐

Animal was (✓)

KILL ZONE Bull

Regular (Either Sex WMZ 53) (5R1)

ZONE	DAYS HUNTED
53	☐

Animal was (✓)

KILL ZONE 53 Bull Cow Calf

Special (Either Sex) (5D1)

ZONE	DAYS HUNTED
☐	☐
☐	☐
☐	☐
☐	☐

Animal was (✓)

KILL ZONE Bull Cow Calf

Bear (08)

Licences Purchased?

1st	2nd	Free
☐	☐	☐

Hunt Information

1st (8R1)

DATE	ZONE	DAYS HUNTED
Apr 13-Jun 27	☐	☐
	☐	☐
Aug 24-Oct 17	☐	☐
	☐	☐

Animal was (✓)

KILL ZONE Boar Sow Cub

2nd (8R2)

DATE	ZONE	DAYS HUNTED
Apr 13-Jun 27	☐	☐
	☐	☐
Aug 24-Oct 17	☐	☐
	☐	☐

Animal was (✓)

KILL ZONE Boar Sow Cub

Free (8T1)

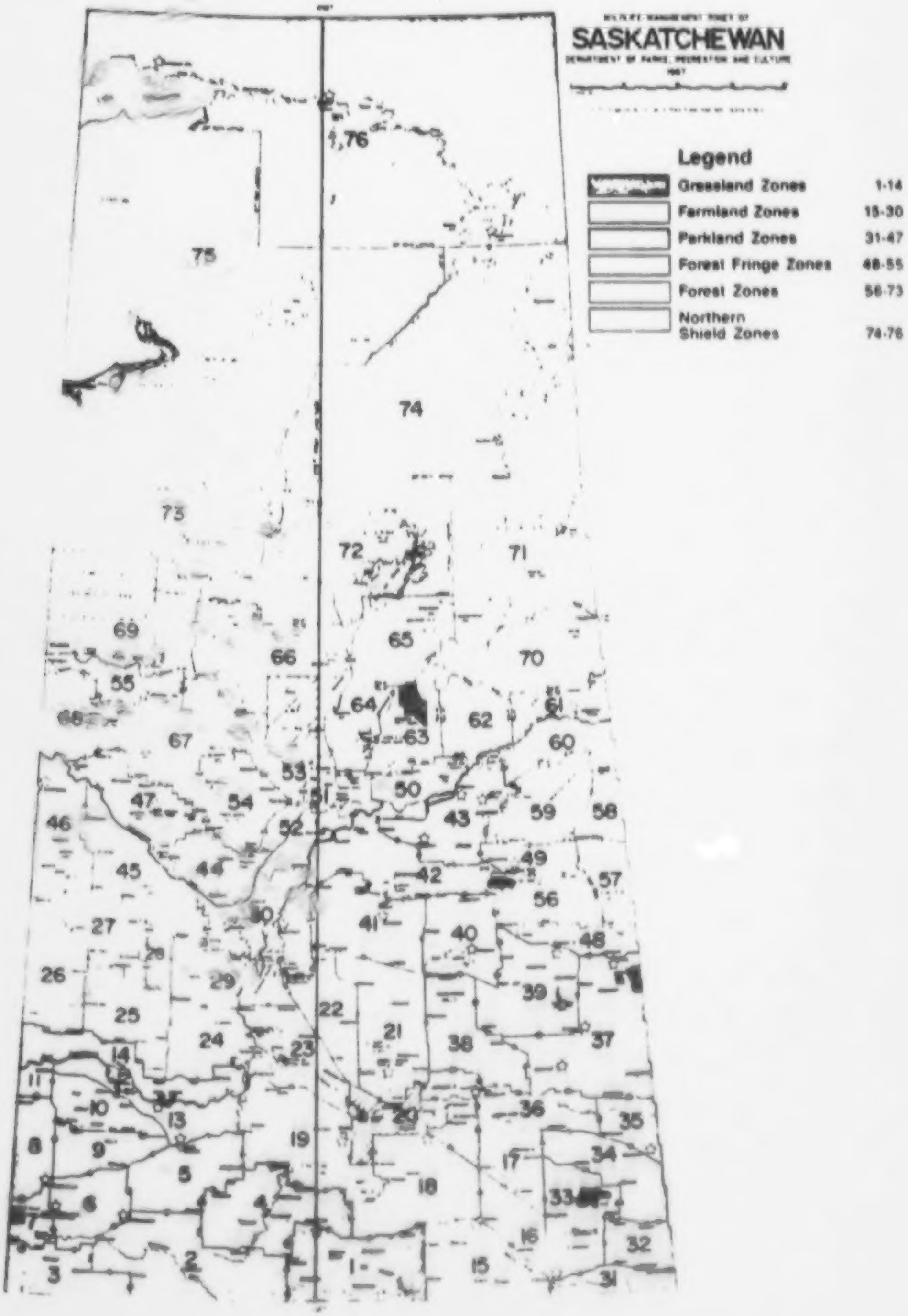
DATE	ZONE	DAYS HUNTED
Apr 13-Jun 27	☐	☐
	☐	☐
Aug 24-Oct 17	☐	☐
	☐	☐

Animal was (✓)

KILL 1 [illegible] ☐ ☐ ☐ Boar Sow Cub

Animal was (✓)

KILL 2 [illegible] ☐ ☐ ☐ Boar Sow Cub


SASKATCHEWAN
DEPARTMENT OF PARKS, RECREATION AND CULTURE
Legend
Grassland Zones 1-14
Farmland Zones 15-30
Parkland Zones 31-47
Forest Fringe Zones 48-55
Forest Zones 56-73
Northern Shield Zones 74-76
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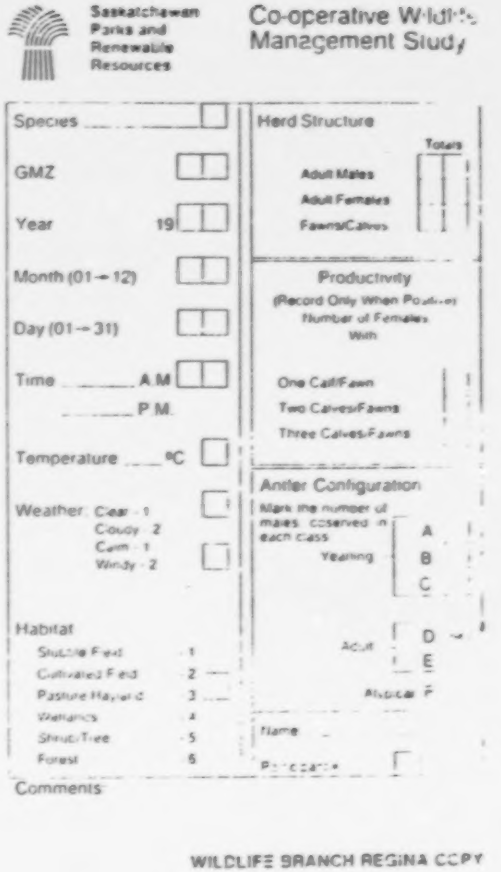
15
31

Appendix 4. 1987 Co-operative Wildlife Management Study Form



Saskatchewan
Parks and
Renewable
Resources

Co-operative Wildlife Management Study

Species ______ ☐

GMZ ☐☐

Year 19☐☐

Month (01→12) ☐☐

Day (01→31) ☐☐

Time ______ A.M. ☐☐
______ P.M.

Temperature ____ °C ☐

Weather: Clear - 1 ☐
Cloudy - 2
Calm - 1 ☐
Windy - 2

Habitat
Stubble Field - 1
Cultivated Field - 2
Pasture Hayland - 3
Wetlands - 4
Shrub/Tree - 5
Forest - 6

Herd Structure
Totals
Adult Males
Adult Females
Fawns/Calves

Productivity
(Record Only When Positive)
Number of Females
With
One Calf/Fawn
Two Calves/Fawns
Three Calves/Fawns

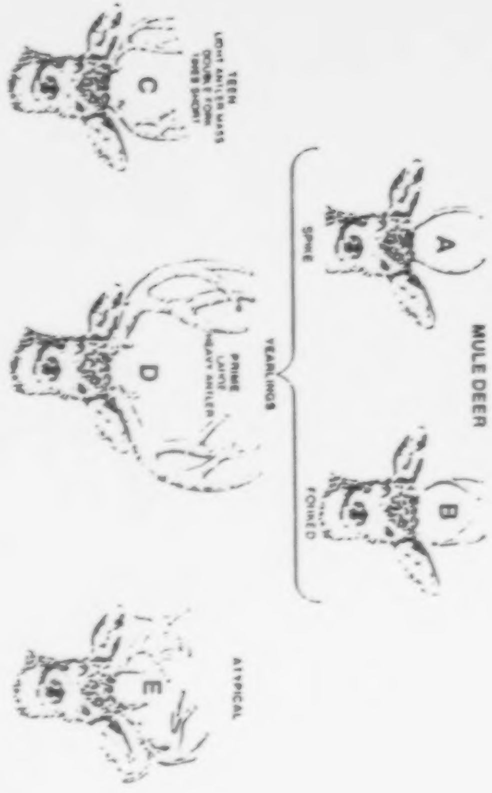
Antler Configuration
Mark the number of males observed in each class
Yearling A
B
C
Adult D
E
Atypical F

Name

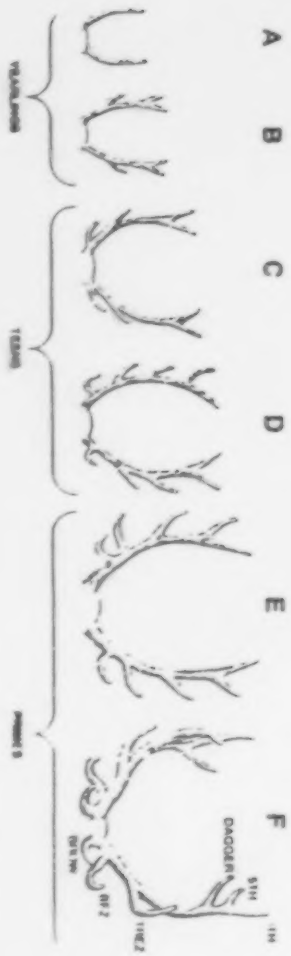
Participant ☐

Comments

WILDLIFE BRANCH REGINA COPY


MULE DEER
A
B
SPIKE
FORKED
YEARLINGS
TEEN
LIGHT ANTLER MASS
DOUBLE FORK
TINES SHORT
C
PRIME
LARGE
HEAVY ANTLER
D
ATYPICAL
E

ELK


A
B
C
D
E
F
4TH
5TH
DAGGER
TREZ
BEZ
BROW
YEARLINGS
TEENS
PRIMES

Appendix 5. Areas of New Wildlife Management Zones

Zone	Area in Km^2	Zone	Area in Km^2
P.A.N.P.	3 874	PRIMROSE A.W.R.	5 987
1	8 321	2	10 640
3	4 297	4	8 118
5	5 966	6	4 195
7	1 895	8	3 393
9	3 435	10	3 546
11	985	12	344
13	4 084	14	5 580
GRASSLAND TOTAL			64 799
15	6 724	16	5 307
17	3 823	18	7 448
19	9 221	20	5 534
21	8 382	22	4 732
23	5 740	24	4 829
25	5 818	26	4 415
27	4 914	28	1 355
29	5 333	30	7 251
FARMLANDS TOTAL			90 826
31	2 522	32	2 790
33	3 883	34	5 386
35	2 614	36	5 185
37	11 315	38	6 412
39	7 603	40	5 414
41	7 212	42	7 413
43	6 777	44	4 577
45	7 665	46	5 959
47	5 719		
PARKLANDS TOTAL			98 446
48	2 531	49	2 395
50	3 333	51	2 873
52	2 913	53	2 772
54	5 696	55	3 749
FOREST FRINGE TOTAL			26 262
56	4 727	57	3 308
58	2 245	59	5 862
60	3 837	61	3 040
62	3 735	63	5 659
64	3 544	65	6 521
* 66	11 280	67	8 675
68	4 158	** 69	7 750
70	8 499	71	17 990
72	18 381	73	45 909
FOREST TOTAL			165 120
74	45 416	75	56 558
76	79 825		
NORTHERN SHIELD TOTAL			181 799
	PROVINCIAL TOTAL		637 113

* excludes P.A.N.P.

** excludes Primrose A.W.R.

Appendix 6. Saskatchewan 1987 Game Bird Seasons

Upland Game Birds

Species	Wildlife Management Zones Open	Season Dates (Inclusive)	Bag Limit
Sharp-tailed Grouse (All Hunters)	Zones 1 to 8, 15 to 19, 23, 24, 29 and 31 to 33, and starting Oct. 7, Elbow, Estevan-Cambria, and Lomond No. 3 (at Maxim) Wildlife Management Units	Sept. 21 - Nov. 14	5 daily 10 possession
	Zones 20 to 22, 30 and 34 to 47, including Last Mountain Lake Wildlife Management Unit	Sept. 21 - Nov. 14	3 daily 6 possession
	Zones 48 to 76, including Clearwater River, Meadow Lake, Nipawin and Lac La Ronge Provincial Parks; Fort a la Corne Wildlife Management Unit; and Bronson Forest Recreation Site	Sept. 14 - Nov. 28	3 daily 6 possession
Sharp-tailed Grouse (Sask. Residents and Canadian Residents Only)	**Zones 9 to 14 and 25 to 28**	**Sept. 21 - Nov. 14**	**5 daily 10 possession**
Hungarian Partridge (All Hunters)	Zones 1 to 8, 15 to 19, 22 to 24, 29 and 31, and starting Oct. 7, Elbow, Estevan-Cambria and Lomond No. 3 (at Maxim) Wildlife Management Units	Sept. 21 - Nov. 14	10 daily 20 possession
	Zones 20, 21, 30 and 32 to 34, including Last Mountain Lake Wildlife Management Unit	Sept. 21 - Nov. 14	5 daily 10 possession
	Zones 35 to 55, including Fort a la Corne Wildlife Management Unit	Sept. 21 - Nov. 14	3 daily 6 possession
Hungarian Partridge (Sask. Residents and Canadian Residents Only)	**Zones 9 to 14**	**Sept. 21 - Nov. 14**	**10 daily 20 possession**
	Zones 25 to 28	**Sept. 21 - Nov. 14**	**5 daily 10 possession**
Pheasants (Sask. Residents Only May Hunt Cocks Only)	Zones 1 to 36, including Elbow, Estevan-Cambria and Lomond No. 3 (at Maxim) Wildlife Management Units	Oct. 7 - Nov. 14	3 daily 6 possession
	Zones 1 to 20 and 31, including Estevan-Cambria and Lomond No. 3 (at Maxim) Wildlife Management Units	Nov. 30 - Dec. 19	3 daily 6 possession
Ruffed Grouse (All Hunters)	**Zones 1 to 47, including Last Mountain Lake and Elbow Wildlife Management Units; and Moose Mountain and Duck Mountain Provincial Parks**	**Sept. 21 - Nov. 14**	**5 daily 10 possession**
	Zones 48 to 76, including Fort a la Corne Wildlife Management Unit; Clearwater River, Greenwater, Meadow Lake, Nipawin and Lac La Ronge Provincial Parks; and Bronson Forest Recreation Site	**Sept. 14 - Nov. 28**	**10 daily 20 possession**
Spruce Grouse (All Hunters)	Zone 43	Sept. 21 - Nov. 14	5 daily 10 possession
	Zones 48 to 76, including Fort a la Corne Wildlife Management Unit, Clearwater River, Meadow Lake, Nipawin and Lac La Ronge Provincial Parks, and Bronson Forest Recreation Site	Sept. 14 - Nov. 28	10 daily 20 possession
Ptarmigan (All Hunters)	**Zones 61 to 66 and 69 to [illegible] including [illegible] Ronge Provincial Parks [illegible]**	**Nov. 16 - Mar. 31, 1988**	**10 daily 20 possession**

Waterfowl

Species	Wildlife Management Zones Open	Season Dates (Inclusive)	Bag Limit
Ducks (All Hunters)	Zones 1 to 42, 44 to 47, and 52, including Elbow and Valepurt Wildlife Management Units, and starting Sept. 16, Last Mountain Lake Wildlife Management Unit	Sept. 14 - Dec. 12	6 daily (4 only may be mallards) 12 possession (8 only may be mallards)
	Zones 43, 48 to 51, and 53 to 76, including Clearwater River, Meadow Lake, Nipawin and Lac La Ronge Provincial Parks, Fort a la Corne and Horsehide Lake Wildlife Management Units, and Bronson Forest Recreation Site	Sept. 1 - Dec. 12	6 daily (4 only may be mallards) 12 possession (8 only may be mallards)
[illegible] Coots and [illegible] Snipe [illegible]	**Zones 1 to 42, 44 to 47, and 52, including Elbow and Valeport Wildlife Management Units, and starting Sept. 16, Last Mountain Lake Wildlife Management Unit [illegible]**	**Sept. 14 - Dec. 12**	**10 daily 20 possession**
	Zones 43, 48 to 51, and 53 [illegible] Clearwater River, Meadow Lake, Nipawin and [illegible] La Ro[illegible] Parks; Fort a la Corne [illegible] Horsehide Lake Wildlife [illegible] and Bronson Forest Recreation Site	**Sept. [illegible] - Dec. 12**	**10 daily 20 possession**
Sandhill Cranes (Sask. Residents and Canadian Residents Only)	Zones 19, 21 to 24, 29, 30, 37 to 42, 44 and 52	Sept. 1 - Sept. 15	5 daily 10 possession
	Zones 11 to 14	Sept. 9 - Sept. 22	5 daily 10 possession
[illegible] (Sask. [illegible] Only)	**Zones 1 to 14, 19, and 22 to [illegible] Elbow Wildlife Management Unit**	**Sept. 23 - Dec. 12**	**5 daily (2 only may be white-fronted geese) 10 possession (4 only may be white-fronted geese)**
	Zones 15 to 18, 20, 21, 30 to 42, 44 to 47, and 52, including Valeport and Last Mountain Lake Wildlife Management Units	**Sept. 16 - Dec. 12**	**5 daily (3 only may be white-fronted geese) 10 possession (6 only may be white-fronted geese)**
	Zones 43, 48 to 51, and 53 to 76, including Clearwater River, Meadow Lake, Nipawin and Lac La Ronge Provincial Parks; Fort a la Corne and Horsehide Lake Wildlife Management Units; and Bronson Forest Recreation Site	**Sept. 1 - Dec. 12**	**5 daily (3 only may be white-fronted geese) 10 possession (6 only may be white-fronted geese)**
Geese (Canadian Residents and Non-residents)	Zones 1 to 14, 19, and 22 to 29, including Elbow Wildlife Management Unit	Sept. 30 - Dec. 12	5 daily (2 only may be white-fronted geese) 10 possession (4 only may be white-fronted geese)
	Zones 15 to 18, 20, 21, 30 to 52, 54, 56 and 57, including Valeport, Last Mountain Lake, Horsehide Lake and Fort a la Corne Wildlife Management Units	Sept. 30 - Dec. 12	5 daily (3 only may be white-fronted geese) 10 possession (6 only may be white-fronted geese)
	Zones 53, 55 and 58 to 76, including Clearwater River, Meadow Lake, Nipawin and Lac La Ronge Provincial Parks and Bronson Forest Recreation Site	Sept. 1 - Dec. 12	5 daily (3 only may be white-fronted geese) 10 possession (6 only may be white-fronted geese)

All hunters please Note: Starting Sept. 30 in Zones 15 to 18, 20 to 22, 30 to 43 and 48 to 76
3 additional Snow or Ross' geese may be taken daily, and 6 additional Snow or Ross' geese may be kept in posssession

Starting Oct. 14 in Zones 1 to 14, 19, 23 to 29 and 44 to 47
3 additional Snow or Ross' geese may be taken daily, and 6 additional Snow or Ross' geese may be kept in possession

Note: Prior to Oct. 18, in Zones 1 to 59, 67, 68 and 69, any open season for geese includes that portion of the day from one-half hour before sunrise to 12:00 noon local time. From Oct. 18 to Dec. 12, geese may be hunted all day in all open zones.

Appendix 7. Saskatchewan 1988 Game Bird Seasons

Upland Game Birds

Species	Wildlife Management Zones Open	Season Dates (Inclusive)	Bag Limit
Sharp-tailed Grouse (All Hunters)	Zones 1 to 8, 15 to 19, 23, 24, 29 and 31 to 33, and starting Oct. 5, Elbow, Estevan-Cambria and Lomond Wildlife Management Units	Sept. 21 - Nov. 19	5 daily 10 possession
	Zones 20 to 22, 30 and 34 to 47, including Last Mountain Lake Wildlife Management Unit	Sept. 21 - Nov. 19	3 daily 6 possession
	Zones 48 to 76, including Clearwater River, Lac La Ronge, Meadow Lake and Nipawin Provincial Parks; Fort a la Corne Wildlife Management Unit; and Bronson Forest Recreation Site	Sept. 7 - Dec. 3	3 daily 6 possession
Sharp-tailed Grouse (Sask. Residents and Canadian Residents Only)	**Zones 9 to 14 and 25 to 28**	**Sept. 21 - Nov. 19**	**5 daily 10 possession**
Hungarian Partridge (All Hunters)	Zones 1 to 8, 15 to 19, 22 to 24, 29 and 31, and starting Oct. 5, Elbow, Estevan-Cambria and Lomond Wildlife Management Units	Sept. 21 - Nov. 19	10 daily 20 possession
	Zones 20, 21, 30 and 32 to 41, including Last Mountain Lake Wildlife Management Unit	Sept. 21 - Nov. 19	5 daily 10 possession
	Zones 42 to 56, including Fort a la Corne Wildlife Management Unit	Sept. 21 - Nov. 19	3 daily 6 possession
Hungarian Partridge (Sask. Residents and Canadian Residents Only)	**Zones 9 to 14**	**Sept. 21 - Nov. 19**	**10 daily 20 possession**
	Zones 25 to 28	**Sept. 21 - Nov. 19**	**5 daily 10 possession**
Hungarian Partridge (Sask. Residents Only)	Zones 1 to 19, 24 and 31, including Estevan-Cambria and Lomond Wildlife Management Units	Dec. 5 - Dec. 21	10 daily 20 possession
Pheasants (Sask. Residents Only, May Hunt Cocks Only)	Zones 1 to 36, including Elbow, Estevan-Cambria and Lomond Wildlife Management Units	Oct. 5 - Nov. 19	3 daily 9 possession
	Zones 1 to 20, 24 and 31, including Estevan-Cambria and Lomond Wildlife Management Units	Dec. 5 - Dec. 21	3 daily 9 possession
Ruffed Grouse (All Hunters)	**Zones 1 to 47, including Elbow and Last Mountain Lake Wildlife Management Units; and Duck Mountain and Moose Mountain Provincial Parks**	**Sept. 21 - Nov. 19**	**5 daily 10 possession**
	Zones 48 to 76, including Clearwater River, Greenwater Lake, Lac La Ronge, Meadow Lake and Nipawin Provincial Parks; Fort a la Corne Wildlife Management Unit; and Bronson Forest Recreation Site	**Sept. 7 - Dec. 3**	**10 daily 20 possession**
Spruce Grouse (All Hunters)	Zone 43	Sept. 21 - Nov. 19	5 daily 10 possession
	Zones 48 to 76, including Clearwater River, Lac La Ronge, Meadow Lake and Nipawin Provincial Parks; Fort a la Corne Wildlife Management Unit; and Bronson Forest Recreation Site	Sept. 7 - Dec. 3	10 daily 20 possession
Ptarmigan (All Hunters)	**Zones 61 to 66 and 69 to 76, including Clearwater River and Lac La Ronge Provincial Parks**	**Nov. 14 - Mar. 31, 1989**	**10 daily 20 possession**

Waterfowl

Species	Wildlife Management Zones Open	Season Dates (Inclusive)	Bag Limit
Ducks (All Hunters)	Zones 1 to 42, 44 to 47 and 52, including Elbow and Valeport Wildlife Management Units, and starting Sept. 21, Last Mountain Lake Wildlife Management Unit	Sept. 12 - Dec. 10	5 daily (3 only may be mallards) 10 possession (6 only may be mallards)
	Zones 43, 48 to 51 and 53 to 76, including Clearwater River, Lac La Ronge, Meadow Lake and Nipawin Provincial Parks, Fort a la Corne and Horseshide Lake Wildlife Management Units, and Bronson Forest Recreation Site	Sept. 1 - Dec. 10	5 daily (3 only may be mallards) 10 possession (6 only may be mallards)
American Coots and Common Snipe (All Hunters)	**Zones 1 to 42, 44 to 47 and 52, including Elbow and Valeport Wildlife Management Units; and starting Sept. 21, Last Mountain Lake Wildlife Management Unit**	**Sept. 12 - Dec. 10**	**10 daily 20 possession**
	Zones 43, 48 to 51 and 53 to 76, including Clearwater River, Lac La Ronge, Meadow Lake and Nipawin Provincial Parks; Fort a la Corne and Horseshide Lake Wildlife Management Units; and Bronson Forest Recreation Site	**Sept. 1 - Dec. 10**	**10 daily 20 possession**
Sandhill Cranes (Sask. Residents and Canadian Residents Only)	Zones 19, 21 to 24, 29, 30, 37 to 42, 44 and 52	Sept. 1 - Sept. 13	5 daily 10 possession
	Zones 11 to 14	Sept. 12 - Sept. 20	5 daily 10 possession
[illegible] Residents Only)	**Zones 1 to 14, 19 and 22 to 29, including Elbow Wildlife Management Unit**	**Sept. 21 - Dec. 10**	**5 daily (2 only may be white-fronted geese) 10 possession (4 only may be white-fronted geese)**
	Zones 15 to 18, 20, 21, 30 to 42, 44 to 47 and 52, including Valeport Wildlife Management Unit and starting September 21, Last Mountain Lake Wildlife Management Unit	**Sept. 14 - Dec. 10**	**5 daily (3 only may be white-fronted geese) 10 possession (6 only may be white-fronted geese)**
	Zones 43, 48 to 51 and 53 to 76, including Clearwater River, Lac La Ronge, Meadow Lake and Nipawin Provincial Parks; Fort a la Corne and Horseshide Lake Wildlife Management Units; and Bronson Forest Recreation Site	**Sept. 1 - Dec. 10**	**5 daily (3 only may be white-fronted geese) 10 possession (6 only may be white-fronted geese)**
Geese (Canadian Residents and Non-residents)	Zones 1 to 14, 19 and 22 to 29, including Elbow Wildlife Management Unit	Sept. 28 - Dec. 10	5 daily (2 only may be white-fronted geese) 10 possession (4 only may be white-fronted geese)
	Zones 15 to 18, 20, 21, 30 to 52, 54, 56 and 57, including Fort a la Corne, Horseshide Lake, Last Mountain Lake and Valeport Wildlife Management Units	Sept. 28 - Dec. 10	5 daily (3 only may be white-fronted geese) 10 possession (6 only may be white-fronted geese)
	Zones 53, 55 and 58 to 76, including Clearwater River, Lac La Ronge, Meadow Lake and Nipawin Provincial Parks; and Bronson Forest Recreation Site	Sept. 1 - Dec. 10	5 daily (3 only may be white-fronted geese) 10 possession (6 only may be white-fronted geese)

All Hunters Please Note: Starting Sept. 28 in Zones 15 to 18, 20 to 22, 30 to 43 and 48 to 76
3 additional Snow or Ross' geese may be taken daily, and 6 additional Snow or Ross' geese may be kept in possession

Starting Oct. 16 in Zones 1 to 14, 19, 23 to 29 and 44 to 47
3 additional Snow or Ross' geese may be taken daily, and 6 additional Snow or Ross' geese may be kept in possession

Note: Prior to Oct. 23, in Zones 1 to 58, 67, 68 and 69, any open season for geese includes that portion of the day from one-half hour before sunrise to 12:00 noon local time. From Oct. 24 to Dec. 10, geese may be hunted all day in all open zones

Appendix 8a. Saskatchewan **Duck** Hunting Regulations, 1976-1987

Year	Area* (Wildlife Management Zone)	Hunting Season Dates	Daily Bag Limit (Possession is twice the daily bag)
1976	1-22	Sept 8 - Dec 18	8 (1 redhead or canvasback)
	23-37	Sept 1 - Dec 11	8 (1 redhead or canvasback)
1977	1-22	Sept 8 - Dec 17	6 (1 redhead or canvasback)
	23-37	Sept 1 - Dec 10	6 (1 redhead or canvasback)
1978	1-22	Sept 11 - Dec 16	6
	23-37	Sept 1 - Dec 9	6
1979	1-22	Sept 10 - Dec 15	8
	23-37	Sept 1 - Dec 8	8
1980	1-22	Sept 8 - Dec 13	8
	23-37	Sept 1 - Dec 6	8
1981**	1-22	Sept 7 - Dec 12	8
	23-37	Sept 1 - Dec 5	8
1982	1-22	Sept 8 - Dec 11	8
	23-37	Sept 1 - Dec 4	8
1983	1-22	Sept 7 - Dec 10	8
	23-37	Sept 1 - Dec 3	8
1984***	1-42, 44-47, 52	Sept 5 - Dec 8	8
	43, 48-51, 53-76	Sept 1 - Dec 8	8
1985	1-42, 44-47, 52	Sept 11 - Dec 7	4
	43, 48-51, 53-76	Sept 2 - Dec 7	4
1986	1-42, 44-47, 52	Sept 15 - Dec 13	6 (4 mallards only)
	43, 48-51, 53-76	Sept 1 - Dec 13	6 (4 mallards only)
1987	1-42, 44-47, 52	Sept 14 - Dec 12	6 (4 mallards only)
	43, 48-51, 53-76	Sept 1 - Dec 12	6 (4 mallards only)

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* Details omitted concerning some Wildlife Management Units (W.M.U.'s) and Provincial Parks. Hunting has traditionally been allowed in the following areas according to the regulations of the surrounding W.M.Z.'s: Last Mountain Lake, Elbow, Valeport, Pasquia, Porcupine, Fort a la Corne and Horsehide Lake W.M.U.'s; Meadow Lake, Nipawin, Lac La Ronge and Clearwater River Provincial Parks; and Bronson Recreation Site.

** All special restrictions lifted from Canadian residents and non-residents.

*** 76 new wildlife management zones in effect.

Appendix 8h. Saskatchewan Goose Hunting Regulations, 1978-1987
(Details omitted concerning local closures, Wildlife Management Units and Provincial Parks)

Year	Area* (Wildlife Management Zone)	Hunting Season Dates	Daily Bag Limit (Possession is twice the daily bag limit)
1978	1-6, 8, 9, 12-15, 22	Sept 27 - Dec 6	5 (2 whitefronts)
	7, 10, 11, 16-21	Sept 20 - Dec 16	5 (3 whitefronts)
	23-37	Sept 1 - Dec 9	5 (3 whitefronts)
	1-25, 28, 30, 32	Sept 1 - Oct 21	Morning Hunting Only
	All Zones	On and After Oct 16	3 Additional White Geese
1979	1-6, 8, 9, 12-15	Sept 26 - Dec 15	5 (2 whitefronts)
	7, 10, 11, 16-22	Sept 19 - Dec 15	5 (3 whitefronts)
	23-37	Sept 1 - Dec 8	5 (3 whitefronts)
	1-25, 28, 30-32	Sept 1 - Oct. 20	Morning Hunting Only
	All Zones	On and After Oct 15	3 Additional White Geese
1980	1-6, 8, 9, 12-15	Sept 24 - Dec 13	5 (2 whitefronts)
	7, 10, 11, 16-22	Sept 17 - Dec 13	5 (3 whitefronts)
	23-37	Sept 1 - Dec 6	5 (3 whitefronts)
	1-25, 28, 30-32	Sept 1 - Dec 6	Morning Hunting Only
	All Zones	On and After Oct 15	3 Additional White Geese
1981	1-6, 8, 9, 12-15	Sept 23 - Dec 12	5 (2 whitefronts)
	7, 10, 11, 16-22	Sept 16 - Dec 12	5 (3 whitefronts)
	23-37	Sept 1 - Dec 5	5 (3 whitefronts)
	1-25, 28, 30, 32, 33	Sept 1 - Oct 20	Morning Hunting Only
	All Zones	On and After Oct 15	3 Additional White Geese
1982	1-6, 8, 9, 12-15	Sept 22 - Dec 11	5 (2 whitefronts)
	7, 10, 11, 16-22	Sept 15 - Dec 4	5 (3 whitefronts)
	23-37	Sept 1 - Dec 4	5 (3 whitefronts)
	1-25, 28, 30, 32	Sept 1 - Oct 20	Morning Hunting Only
	All Zones	On and After Oct 15	3 Additional White Geese
1983	1-6, 8, 9, 12-15	Sept 21 - Dec 10	5 (2 whitefronts)
	7, 10, 11, 16-22	Sept 14 - Dec 10	5 (3 whitefronts)
	23-37	Sept 1 - Dec 3	5 (3 whitefronts)
	1-25, 28, 30, 32, 33	Sept 1 - Oct 20	Morning Hunting Only
	1-37 (All Zones)	On and After Oct 15	3 Additional White Geese
1984	1-14, 18, 19, 20, 22-29	Sept 19 - Dec 8	5 (2 whitefronts)
	15, 16, 17, 21, 30-42, 44-47, 52	Sept 12 - Dec 8	5 (3 whitefronts)
	43, 48-51, 53-76	Sept 1 - Dec 8	5 (3 whitefronts)
	1-59, 67, 68, 69	Sept 1 - Oct 20	Morning Hunting Only
	1-76 (All Zones)	On and After Oct 15	3 Additional Snow or Ross' Geese
1985	1-14, 19, 22-29	Sept 25 - Dec 7	5 (2 whitefronts)
	15, 16, 17, 18, 20, 21, 30-42, 44-47, 52	Sept 18 - Dec 7	5 (3 whitefronts)
	43, 48-51, 53-76	Sept 2 - Dec 7	5 (3 whitefronts)
	1-59, 67, 68, 69	Sept 2 - Oct 19	Morning Hunting Only
	1-76 (All Zones)	On and After Oct 15	3 Additional Snow or Ross' Geese
1986	1-14, 19, 22-29	Sept 24 - Dec 13	5 (2 whitefronts)
	15-18, 20, 21, 30-42, 44-47, 52	Sept 17 - Dec 13	5 (3 whitefronts)
	43, 48-51, 53-76	Sept 1 - Dec 13	5 (3 whitefronts)
	1-59, 67-69,	Sept 1 - Oct 19	Morning Hunting Only
	15-18, 20-22, 30-43, 48-76	Oct 1 - Dec 13	3 Additional Snow or Ross' Geese
	1-14, 19, 23-29, 44-47	Oct 15 - Dec 13	3 Additional Snow or Ross' Geese
1987	1-14, 19, 22-29	Sept 21 - Dec 10	5 (2 whitefronts)
	15-18, 20, 21, 30-42, 44-47, 52	Sept 14 - Dec 10	5 (3 whitefronts)
	43, 48-51, 53-76	Sept 1 - Dec 10	5 (3 whitefronts)
	1-59, 67-69	Sept 1 - Oct 22	Morning Hunting Only
	15-18, 20-22, 30-43, 48-76	Sept 28 - Dec 10	3 Additional Snow or Ross' Geese
	1-14, 19, 23-29, 44-47	Oct 24 - Dec 10	3 Additional Snow or Ross' Geese

Appendix 8c. Saskatchewan Sharp-tailed Grouse Hunting Regulations, 1976-1987 (Details omitted concerning some Wildlife Management Units & Parks)

Year	Wildlife Management Zones	Hunting Season Dates	Daily Bag Limit
1976*	1-6, 8, 18-37,	Sept 27 - Nov 13	5
	7, 9-17	Sept 27 - Nov 13	3
1977*	1-22 (M. Mtn. Park)	Sept 26 - Nov 19 (Sept 26 - Oct 22)	5
	23-36	Sept 12 - Nov 5	5
	37	Sept 5 - Nov 5	5
1978*	1-22 (M. Mtn. Park)	Sept 25 - Nov 11 (Sept 25 - Oct 28)	5
	23-33	Sept 18 - Nov 11	5
	34-37	Sept 4 - Nov 4	5
1979*	1-22 (M. Mtn. Park)	Sept 24 - Nov 10 (Sept 24 - Oct 27)	5
	23-33	Sept 17 - Nov 10	5
	34-37	Sept 3 - Nov 3	5
1980*	1-33 (M. Mtn. Park)	Sept 22 - Nov 15 (Sept 22 - Oct 25)	5
	34-37	Sept 1 - Nov 29	5
1981**	1-33 (M. Mtn. Park)	Sept 21 - Nov 14 (Sept 21 - Oct 24)	5
	34-37	Aug 31 - Dec 5	5
	Elbow, Estevan-Cambria and Lomond #3 W.M.U.'s	Oct 7 - Nov 14	5
1982**	1, 7, 8 (east Hwy #2), 9-22	Oct 4 - Nov 13	5
	2-6, 8 (west Hwy #2)	Oct 13 - Nov 13	5
	23-33	Oct 4 - Nov 27	5
	34-37	Aug 30 - Nov 27	5
1983***	1-4, 7-15	Oct 3 - Nov 12	5
	5, 6	Oct 3 - Nov 12	3
	16-22	Sept 26 - Nov 12	5
	23-37	Sept 5 - Dec 3	5
1984****	1-8, 15-30	Oct 1 - Nov 10	5
	9-14	Oct 1 - Nov 10	3
	31-47	Sept 24 - Nov 10	5
	48-76	Sept 10 - Dec 1	5
1985****	1-47	Sept 30 - Nov 16	3
	48-76	Sept 9 - Nov 30	3
1986****	1-47	Sept 22 - Nov 15	3
	48-76	Sept 8 - Nov 29	3
1987****	1-19, 23-29, 31-33	Sept 21 - Nov 14	5
	20-22, 30, 34-47	Sept 21 - Nov 14	3
	48-76	Sept 14 - Nov 28	3

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* Canadian and non-resident game bird licences not valid for sharp-tailed grouse in Zones 5, 6, 14 and 15.

** All special restrictions lifted from Canadian residents; non-residents permitted to hunt sharptails in Zone 5 but not in Zones 6, 14 and 15.

*** Non-residents of Canada not permitted to hunt sharptails in Zones 5, 6, 14 and 15.

**** Non-residents of Canada may not hunt sharp-tailed grouse in Zones 9-14 and 25-28.

Appendix 8d. Saskatchewan Hungarian Partridge Hunting Regulations, 1976-1987 (Details omitted concerning some Wildlife Management Units & Parks)

Year	Wildlife Management Zones	Hunting Season Dates	Daily Bag Limit
1976	1-6, 8	Sept 27 - Nov 13	6
	7, 9-22	Sept 27 - Nov 13	3
1977	1-15	Sept 26 - Nov 19	7
	16-22	Sept 26 - Nov 19	5
1978	1-9	Sept 25 - Nov 11	6
	10-22	Sept 25 - Nov 11	3
1979	1-16	Sept 24 - Nov 10	6
	17-22	Sept 24 - Nov 10	3
1980	1-16	Sept 22 - Nov 15	6
	17-22	Sept 22 - Nov 15	3
1981*	1-16	Sept 21 - Nov 14	6
	17-22	Sept 21 - Nov 14	3
	Elbow, Estevan-Cambria and Lomond #3 W.M.U.'s	Oct 7 - Nov 14	6
1982*	1, 7, 8 (west Hwy #2), 9-16	Sept 27 - Nov 13	5
	2-6, 8 (east Hwy #2)	Oct 13 - Nov 13	5
	Elbow, Estevan-Cambria and Lomond #3 W.M.U.'s	Oct 4 - Nov 13	5
	17-22	Sept 27 - Nov 13	3
1983**	1-12	Sept 26 - Nov 12	10
	Some W.M.U.'s	Oct 3 - Nov 12	10
	13-22	Sept 26 - Nov 12	5
1984***	1-24	Sept 24 - Nov 10	10
	Elbow, Estevan-Cambria and Lomond #3 WMU's	Oct 1 - Nov 10	10
	25-47	Sept 24 - Nov 10	5
	48-55 (including Fort a la Corne)	Sept 10 - Nov 10	5
1985***	1-14, 19	Sept 23 - Nov 16	10
	15-18, 20-26	Sept 23 - Nov 16	5
	Starting September 30, also Elbow, Estevan-Cambria, and Lomond #3 W.M. Units		
	27-55	Sept 23 - Nov 16	3
1986***	1-15, 18, 19, 31	Sept 22 - Nov 15	10
	16, 17, 20-29	Sept 22 - Nov 15	5
	30, 32-55	Sept 22 - Nov 15	3
1987***	1-19, 22-24, 29 and 31	Sept 21 - Nov 14	10
	20, 21, 25-28, 30, 32-34	Sept 21 - Nov 14	5
	35-55	Sept 21 - Nov 14	3

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* Special restrictions lifted from Canadian residents. Non-residents cannot take huns in Zones 5, 6, 14 and 15.

** Non-residents of Canada not permitted to hunt partridge in Zones 5, 6, 14, and 15.

*** Non-residents of Canada may not hunt Hungarian Partridge in Zones 9-14 and 25-28.

Appendix 8e. Saskatchewan Pheasant Hunting Regulations, 1975-1987
NOTE: Only Saskatchewan Residents may hunt pheasants (cocks only)
(Details omitted concerning some Wildlife Management Units & Parks)

Year	Wildlife Management Zones	Hunting Season Dates	Daily Bag Limit
1975	1-6	Oct 6 - Nov 15	4
	7-17	Oct 6 - Nov 15	3
	6	Dec 8 - Dec 27	4
1976	7, 16, 17	Oct 4 - Oct 23	2
	1-6, 8	Oct 4 - Nov 13	5
	9-15	Oct 4 - Nov 13	2
	6	Dec 6 - Jan 1/77	5
1977	1-17 (L. Mtn. Lake & Elbow WMU)	Oct 3 - Nov 19	5
	6	Dec 5 - Dec 31	5
1978	1-17 (L. Mtn. Lake & Elbow WMU)	Oct 2 - Nov 11	5
	6	Dec 4 - Dec 30	5
1979	1-17 (L. Mtn. Lake & Elbow WMU)	Oct 1 - Nov 10	5
	6	Dec 3 - Dec 29	5
1980	1-17 (L. Mtn. Lake & Elbow WMU)	Oct 6 - Nov 15	5
	6	Dec 1 - Jan 3/81	5
1981	1-17 including Last Mountain Lake, Estevan-Cambria & Lomond #3 W.M.U.'s	Oct 7 - Nov 14	5
	1-5, 8	Nov 30 - Dec 12	5
	6	Nov 30 - Jan 2/82	5
1982	1-17 including Last Mountain Lake WMU	Oct 6 - Nov 13	5
	1-9, 12, 17	Nov 26 - Dec 18	5
1983	1-17 including Last Mountain Lake WMU	Oct 5 - Nov 12	5
	1-9, 12, 17	Nov 28 - Dec 17	5
1984	1-36 (includes Elbow, Estevan-Cambria and Lomond #3 W.M.U.'s)	Oct 3 - Nov 10	5
	1-20, 23, 24, 31, 35, 36	Nov 26 - Dec 15	5
1985	1-36 including Elbow, Estevan-Cambria and Lomond #3 W.M.U.'s)	Oct 2 - Nov 16	3
	1-24, 29, 31, 35, 36	Dec 2 - Dec 21	3
1986*	1-36 including Elbow, Estevan-Cambria and Lomond #3 W.M.U.'s)	Oct 1 - Nov 15 *Note: Late season cancelled for 1986	3
1987	1-36	Oct 7 - Nov 14	3
	1-20 and 31	Nov 30 - Dec 19	3

Appendix 8f. Saskatchewan Ruffed Grouse Hunting Regulations, 1976-1987 (Details omitted concerning some Wildlife Management Units and Parks)

Year	Wildlife Management Zones	Hunting Season Dates	Daily Bag Limit
1976	1-15	Sept 27 - Nov 13	4
	16-22 (including Moose Mountain Park)	Sept 27 - Nov 13	6
	23-37	Sept 20 - Dec 4	6
1977	1-15	Sept 26 - Nov 19	5
	16-22	Sept 26 - Nov 19	5
	23-36	Sept 12 - Dec 10	10
	37	Sept 5 - Dec 10	10
	Moose Mountain Park	Sept 26 - Oct 22	10
1978	1-15	Sept 25 - Nov 11	5
	16-22	Sept 25 - Nov 11	10
	23-37	Sept 4 - Dec 2	10
	Moose Mountain Park	Sept 25 - Oct 28	10
1979	1-15	Sept 24 - Nov 10	5
	16-22	Sept 24 - Nov 10	10
	23-37	Sept 3 - Dec 1	10
	Moose Mountain Park	Sept 24 - Oct 27	10
1980	1-22	Sept 22 - Nov 15	5
	23-37	Sept 1 - Dec 6	5
	Moose Mountain Park	Sept 22 - Oct 25	5
1981*	1-22	Sept 21 - Nov 14	5
	23-37	Aug 31 - Dec 5	5
	Elbow W.M.U.	Oct 7 - Nov 14	5
	Moose Mountain Park	Sept 21 - Oct 24	5
1982	1-22	Sept 27 - Nov 13	5
	23-33	Sept 13 - Nov 27	5
	34-37	Aug 30 - Nov 27	5
	Elbow W.M.U.	Oct 4 - Nov 13	5
	Moose Mountain Park	Nov 1 - Nov 24	5
	Greenwater Park	Nov 1 - Nov 27	5
1983	1-22	Sept 26 - Nov 12	5
	23-37	Sept 5 - Dec 3	5
	Elbow W.M.U.	Oct 3 - Nov 12	5
	Moose Mountain Park	Oct 31 - Nov 26	5
	Greenwater Park	Oct 24 - Dec 3	5
1984	1-47 (including Moose Mountain Park)	Sept 24 - Nov 10	5
	48-76	Sept 10 - Dec 1	5
1985	1-47 (including Moose Mountain Park)	Sept 23 - Nov 16	5
	48-76	Sept 9 - Nov 30	5
1986	1-47 (including Moose Mountain Park)	Sept 22 - Nov 15	5
	48-76	Sept 8 - Nov 29	5
1987	1-47 & Moose Mtn. Park	Sept 21 - Nov 14	5
	48-76	Sept 14 - Nov 28	10

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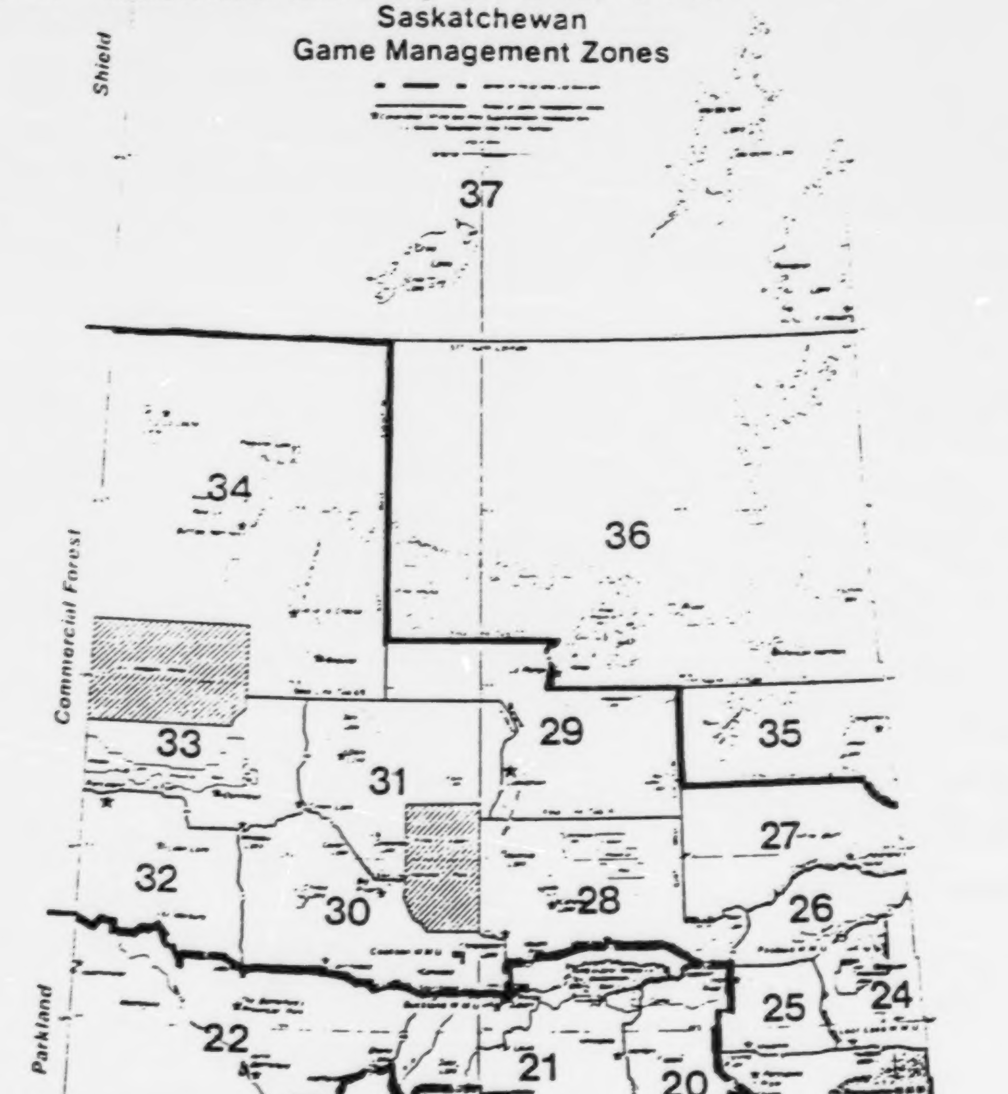
* Special restrictions removed for Canadian resident hunters. Non-residents could not take ruffed grouse in Zones 5, 6, 14 and 15.

Appendix 9. Saskatchewan Game Management Zones, 1975-83


Saskatchewan
Game Management Zones
Shield
Commercial Forest
Parkland
Farmland
Grassland
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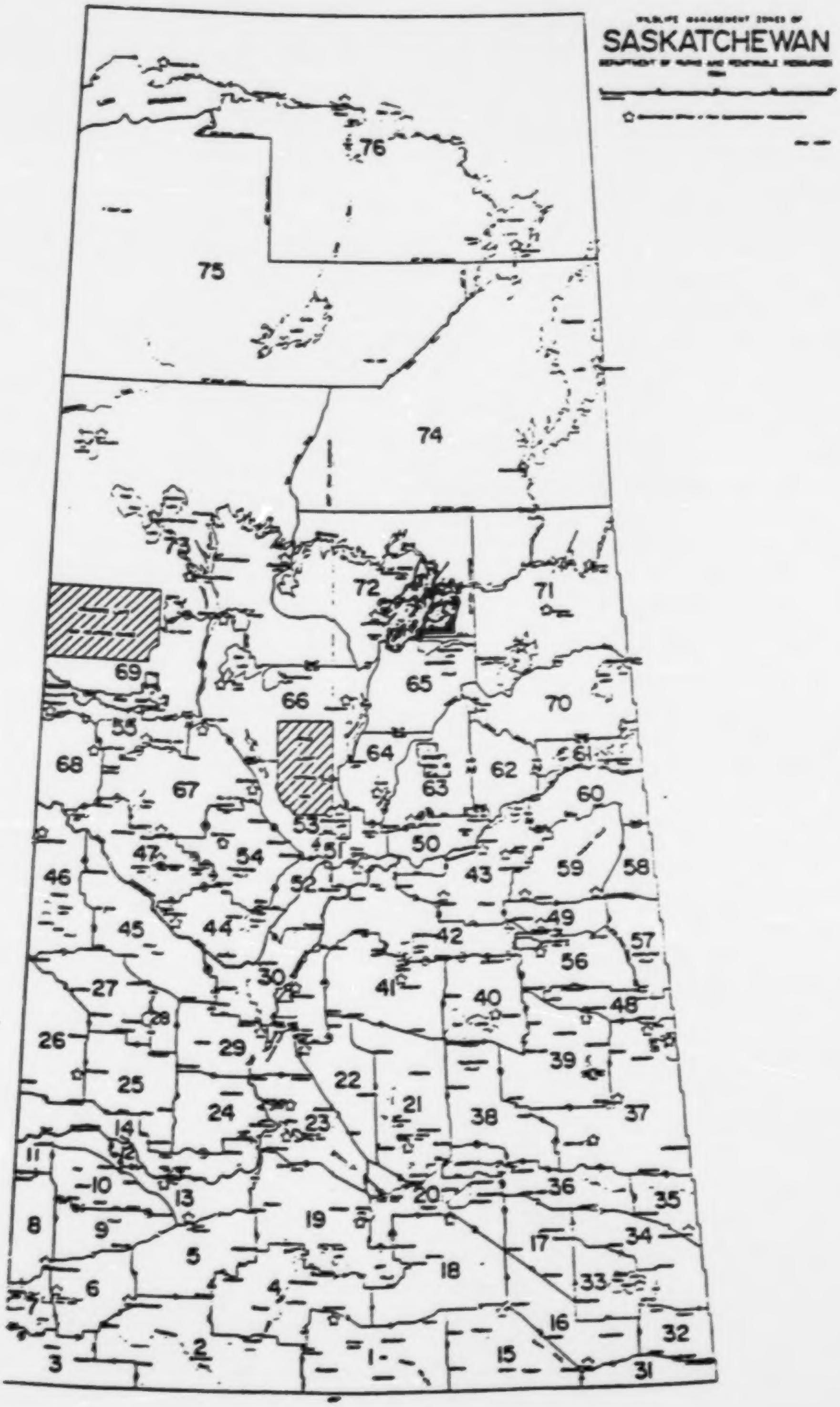
Appendix 10. Saskatchewan Wildlife Management Zones 1984-88


SASKATCHEWAN
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Appendix 11. 1987 Saskatchewan Game Bird Hunter Survey Questionnaire

Saskatchewan Parks Recreation and Culture

Hon. Colin Maxwell
Minister

1987 Saskatchewan Game Bird Hunter Survey

A Message from the Director of Wildlife

Fellow Sportsman:

As one of Saskatchewan's 40,000 game bird hunters, you have been selected to receive the 1987 Game Bird Hunter Survey.

This survey is important to future game bird hunting in Saskatchewan. In view of dwindling habitat, your harvest results form an integral part of game bird management in this province.

The survey provides important harvest and hunting pressure information for each wildlife management zone. We use your replies, along with spring breeding surveys and reproduction information from wing samples, to set responsible bird quotas and season dates.

Because the names for the survey are selected randomly from last year's licence sales, you may receive a questionnaire two or more years in a row.

Please take a few minutes after you have completed your 1987 bird hunting to record your activity; then mail the survey in the enclosed postage paid envelope.

Your help in filling out the Game Bird Hunter Survey is appreciated. By doing so, you contribute to better wildlife management in Saskatchewan.

I sincerely hope your 1987 hunting season is successful.

Dennis Sherratt
Director
Wildlife Branch
Saskatchewan Parks, Recreation and Culture

1987 Saskatchewan Game Bird Hunter Survey

1. If you did not purchase a 1987 Saskatchewan Game Bird Licence please check ☑ here ☐ and return immediately, thank you

2. Check ☑ each hunting licen u purchased in 1987, even if you were unsuccessful
   Saskatchewan Game Bird Lic ☐ Migratory Game Bird Permit ☐

3. Check ☑ each game bird you hunted in 1987.

Sharp-tailed Grouse	☐	Pheasant	☐	Ptarmigan	☐
Hungarian Partridge	☐	Ducks	☐	Coots	☐
Ruffed Grouse	☐	Geese	☐	Common Snipe	☐
Spruce Grouse	☐	Sandhill Cranes	☐		

4. **Please record all your hunting activities, whether or not you bagged any birds.**
   - ***Use a separate line for each date you hunted;*** **if you hunted in more than one zone on the same day, use a separate line for each zone. (See example below).**
   - Record the amount of time you hunted as follows:
     (4 or more hours = 1 day Less than 4 hours = ½ day)
   - Record only the number of birds you bagged and retrieved
   - Check ☑ any species you hunted but did not bag
   - See examples

5. **Please mail no later than January 15, 1988.**

	Date	Wildlife Mgmt Zone	Time Hunted		Upland Birds						Migratory Birds							
											Ducks			Geese				
			1 Day	Day	Sharp-tailed Grouse	Hungarian Partridge	Ruffed Grouse	Spruce Grouse	Pheasant	Ptarmigan	Male/Drake Mallards	Female/Hen Mallards	Other Ducks	Canadas	White-fronts	Snows & Blues	Ross	Sandhill Cranes
EXAMPLES	Oct 7	5		✓	✓	2			1									
	Oct 7	19		✓	1	✓					1	2	✓					
	Oct 28	40	✓								2	✓	1	1	2	1		
	Nov 5	55		✓			2	✓										

№ 0676

HUNTERS: This page is yours to keep.

Please tear off this section before mailing back the questionnaire in the enclosed, postage-paid envelope.

SEPTEMBER

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

OCTOBER

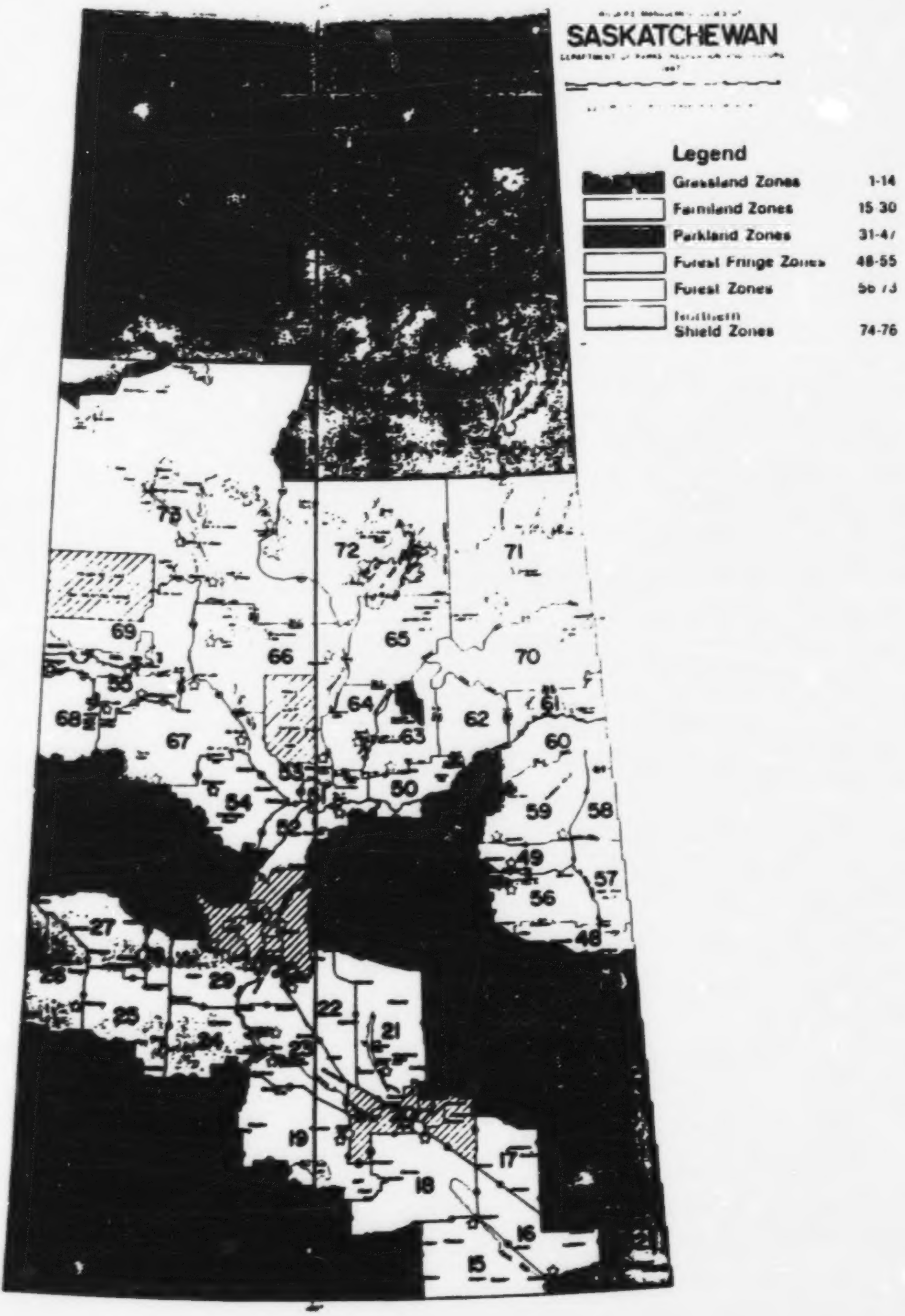
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

NOVEMBER

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

DECEMBER

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		


SASKATCHEWAN
Legend
Grassland Zones 1-14
Farmland Zones 15-30
Parkland Zones 31-47
Forest Fringe Zones 48-55
Forest Zones 56-73
Northern Shield Zones 74-76
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Last year's hunting statistics are on the reverse side, for your information

1986 Game Bird Hunting Activity

Duck and goose hunter days increased about 14 percent from 1985 with an estimated 34,800 active waterfowl hunters. Duck hunters harvested 125,000 mallards, up 12.5 percent from 1985 but well within the 25 percent harvest reduction objective of the North American Waterfowl Management Plan. Goose hunters bagged 10 percent fewer birds and were slightly less successful (6.5 birds per successful hunter) than in 1985, possibly due to the inclement fall weather.

The sandhill crane harvest increased for the third consecutive year to 7,480 birds with a corresponding 22 percent increase in active hunters. Zone 21 (Last Mountain Lake) again accounted for the bulk of the harvest (69%).

Total upland bird hunting activity (74,900 recreation days) almost doubled (up 87 percent) from 1985 levels in response to increased populations of all species. About 90 percent of the 29,000 active upland bird hunters enjoyed success harvesting an average of 9.4 upland birds each.

Sharp-tailed grouse, Hungarian partridge and spruce grouse harvests doubled from 1985 levels while the ruffed grouse harvest tripled. The cock pheasant harvest increased by 50 percent.

Saskatchewan residents purchased 41,317 game bird licences, up 8 percent from 1985. Licence sales to out-of-province Canadians were 2,158 while non-residents (primarily Americans) purchased 3,731 bird licences.

In summary, last fall's upland bird hunting was greatly improved, while low mallard populations held waterfowl activity to below average levels.

	Harvest					Active Hunters				
	1982	1983	1984	1985	**1986**	1982	1983	1984	1985	**1986**
Ducks	292 000	326 000	183 000	153 000	**181,000**	34 000	35 000	[illegible]	23 400	**25,100**
Geese	155 000	213 000	162 000	176 000	**159,000**	32 000	36 000	27 400	28 000	**29,500**
Sandhill Cranes	3 500	3 000	3 100	6 200	**7,500**	1 500	1 200	[illegible]	1 760	**2,160**
Sharp-tailed Grouse	52 000	59 000	54 000	41 800	**78,600**	20 000	21 000	17 000	16 000	**21,900**
Hungarian Partridge	42 000	61 000	60 000	42 000	**92,300**	17 000	19 000	15 500	12 900	**18,000**
Ruffed Grouse	17 000	13 500	13 000	15 100	**48,000**	10 000	8 800	[illegible]	6 400	**10,100**
Spruce Grouse	3 200	4 000	4 300	4 200	**11,900**	1 900	1 600	1 500	1 400	**2,800**
Pheasant	7 500	16 000	12 000	7 100	**10,600**	3 900	6 300	5 000	3 700	**4,800**

More detailed information concerning game bird management can be obtained from Wildlife Branch, Saskatchewan Parks, Recreation and Culture, 3211 Albert Street, Regina, Saskatchewan S4S 5W6 or your local Parks, Recreation and Culture office.

Saskatchewan
Parks. Recreation
and Culture

December 1, 1987

Fellow Sportsman:

This is a friendly reminder to return the Game Bird Hunter Survey we sent you in September. However, **please disregard this letter if you are planning to do more bird hunting, or if you recently mailed your survey**.

We have enclosed another survey form and a self-addressed, postage-paid envelope in case the first set went astray.

By completing and returning the Game Bird Hunter Survey, you will be providing the Wildlife Branch with essential hunting information which cannot be obtained without your assistance. Information from last year's survey appears on the back of the enclosed form and in the 1987 Hunting and Trapping Guide.

I am sure I can count on you to help in this way with Saskatchewan's wildlife management.

Sincerely,

Dennis Sherratt

Dennis Sherratt
Director
Wildlife Branch
Saskatchewan Parks, Recreation and Culture

Appendix 12. 1987 Saskatchewan Game Bird Hunter Survey
Follow Up Letter

Appendix 13.

Criteria to be used to determine duck bag limits in Saskatchewan during stabilized hunting regulations, 1979-1984.

1. The duck bag limit in Saskatchewan will be 8 birds per day, 16 in possession with no species restriction except where:

   - $P + M \leq 3.0$ m. or $M \leq 1.75$ m. when the bag limit = 6 per day; 12 in possession.
   - $P + M \leq 2.5$ m. or $M \leq 1.5$ m. when the bag limit = 4 per day; 8 in possession.

   When bag limits identified by $P + M$ differ from M, $P + M$ limits will be implemented only when similar $P + M$ values occur for 2 years in a row.

2. The third option (4 bag limit) is considered a response to a crisis situation and will be considered only when equivalent harvest reductions are implemented throughout the Central and Mississippi Flyways.

(After Prairie Waterfowl Harvest Program 1979-84 - Saskatchewan).

Note: where P is the number of May ponds and M is the number of breeding mallards in southern Saskatchewan (strata 30 to 35) and m = million.

i.e. If the number of May ponds and breeding mallards totals less than 3 million or the breeding mallard population is less than 1.75 million the daily bag and possession limits will be 6 and 12.

Appendix 14. 1987-88 Midwinter waterfowl survey.

FLYWAY	Atlantic	Mississippi	Central	Pacific	U.S. Total 1988	U.S. Total 1987
Mallard	160,300	2,777,400	986,500	1,493,300	5,417,500	4,598,500
Black duck	226,600	109,300	TR*		335,900	268,200
Mottled duck	1,000	70,000	28,400		99,400	76,700
Gadwall	9,900	699,300	110,300	70,600	890,100	705,300
Wigeon	60,800	156,900	67,900	796,500	1,082,100	647,800
G-W teal	60,900	401,200	737,200	462,600	1,661,900	1,192,600
B-W teal	14,300	127,000	6,800	3,200	151,300	93,400
Cinn teal						
Shoveler	8,200	188,800	102,600	309,900	609,500	452,200
Pintail	36,300	452,600	733,400	1,262,700	2,485,000	1,466,800
Wood duck	6,600	19,100	700	800	27,200	21,200
Whistling duck	4,700		100		4,800	400
Subtotal-Dabblers	589,600	5,001,600	2,773,900	4,399,600	12,764,700	9,523,100
Redhead	87,500	14,800	213,100	10,900	326,300	382,300
Canvasback	117,800	138,900	18,000	28,900	303,600	225,900
Scaup	258,500	499,500	79,700	125,800	963,500	940,900
Ringneck	72,800	267,200	33,900	39,500	413,400	281,500
Goldeneye	28,600	61,900	14,800	46,800	152,100	151,700
Bufflehead	54,500	4,700	6,400	36,500	102,100	105,100
Ruddy duck	52,300	34,600	3,400	95,400	185,700	164,400
Subtotal-Divers	672,000	1,021,600	369,300	383,800	2,446,700	2,251,800
Eider	89,400				89,400	66,000
Scoter	39,000	100		95,400	134,500	86,600
Oldsquaw	18,100	1,700		400	20,200	25,100
Harlequin	TR			200	200	100
Subtotal Seaducks	146,500	1,800		96,000	244,300	177,800
Mergansers	105,100	93,400	113,000	24,100	335,600	267,100
Unidentified ducks	4,000	11,800	10,100	14,400	40,300	54,200
TOTAL DUCKS	1,517,200	6,130,200	3,266,300	4,917,900	15,831,600	12,274,000
Brant	131,100			21,900	153,000	126,700
Snow goose	197,500	1,014,700	782,100	347,000	2,341,300	2,415,300
Blue goose						
Ross' goose						
White-fronted goose	TR	76,700	90,600	100,000	267,300	336,500
Canada goose	737,900	1,146,400	881,800	364,200	3,130,300	2,969,900
TOTAL GEESE	1,066,500	2,237,800	1,754,500	833,100	5,891,900	5,848,400
Tundra swan	77,100	300	TR	59,200	136,600	147,300
Trumpeter swan		100	200	1,800	2,100	1,500
Mute swan	6,100	600		TR	6,700	6,100
TOTAL SWANS	83,200	1,000	200	61,000	145,400	154,900
COOT	869,100	585,500	421,800	193,700	2,070,100	1,775,400
GRAND TOTAL	3,536,000	8,954,500	5,442,800	6,005,700	23,939,000	20,052,700

*TRace - fewer than 50.

Appendix 15. Upland Game Bird Hunters Active in Saskatchewan, 1972-1987

Year	All Upland Bird Hunters	Active Sharp-tailed Grouse Hunters	Active Hungarian Partridge Hunters	Active Ruffed Grouse Hunters
1972	33,985	28,496	23,253	10,894
1973	28,500	23,498	20,741	9,102
1974	21,857	16,041	15,276	7,477
1975	27,812	19,746	17,356	12,091
1976	39,035	27,976	22,835	14,782
1977	41,772	29,794	25,535	17,757
1978	36,766	27,577	21,320	17,042
1979	36,373	28,221	21,041	17,545
1980	36,786	27,949	20,698	18,363
1981	32,147	24,461	19,617	14,466
1982	26,884	20,375	17,056	10,215
1983	28,266	21,068	19,014	8,754
1984	22,334	17,164	15,511	6,706
1985	20,777	15,838	12,867	6,427
1986	28,849	21,860	17,964	10,147
1987	24,918	18,151	15,699	11,170

Appendix 16. Upland Game Bird Reproductive Index, 1972-1987
(Based on Wing Samples from harvest)

Juveniles/Adult in Harvest

Year	Sharp-tailed Grouse	Hungarian Partridge	Ruffed Grouse
1972	1.45	4.06	Not Available*
1973	1.21	4.80	Not Available*
1974	2.09	3.49	Not Available*
1975	1.78	3.74	Not Available*
1976	1.19	2.56	Not Available*
1977	0.82	2.79	Not Available*
1978	2.01	2.88	Not Available*
1979	1.62	3.92	2.43
1980	0.93	3.11	1.41
1981	0.77	1.50	2.30
1982	1.96	2.99	2.28
1983	1.45	3.20	2.51
1984	0.97	2.67	1.97
1985	1.71	3.60	3.45
1986	1.68	5.50	3.37
1987	1.27	3.10	4.02

*Prior to 1979 ruffed grouse wings were not collected from hunters.

Appendix 17. Sharp-tailed Grouse Reproduction* in Saskatchewan, 1987

Wildlife Management Area	Sample Size (wings)	% Juveniles	Juveniles/Adult
WMZ 1	59	59	1.46
WMZ 4	41	61	1.56
GRASSLAND	179	58	1.36
WMZ 19	190	55	1.21
WMZ 23	46	54	1.19
FARMLAND	437	54	1.17
PARKLAND	84	61	1.55
FOREST FRINGE PLUS FOREST	69	58	1.38
PROVINCE	769	56	1.27

*Based on sample of wings from hunter-killed birds.

Appendix 18. Sharp-tailed Grouse Reproductive Index, 1975-1987
(From Wing Samples)

(Juveniles/Adult in Harvest)

Year	Grassland	Farmland	Parkland	Forest	Province
1975	1.67	1.95	1.06*	2.38*	1.78
1976	0.76	1.62	2.09	1.42	1.19
1977	0.56	0.88	0.84	2.80*	0.82
1978	2.00	2.18	1.78	2.73*	2.01
1979	0.73	1.75	1.68	3.81	1.62
1980	0.46	0.94	1.66	1.51	0.93
1981	0.62	0.81	0.98	0.62	0.77
1982	0.85	2.19	2.44	2.50	1.96
1983	1.07	1.62	1.36	0.58	1.45
1984	0.53	1.06	1.71	2.33	0.97
1985	1.08	1.94	1.36	8.67*	1.71
1986	2.22	1.60	1.02	3.29	1.68
1987	1.36	1.17	1.55	1.38	1.27
1975-86 $\bar{x}$	1.05	1.55	1.50	2.72	1.41
1957-87 $\bar{x}$					1.49

*Sample less than 50 wings

Appendix 19. Sharp-tailed Grouse Breeding Index (Males/mi^2, Males/km^2) and Harvest 1972-88

Year	Grassland		Farmland		Parkland		Province		Harvest
	/mi^2	(/km^2)	/mi^2	(/km^2)	/mi^2	(/km^2)	/mi^2	(/km^2)	
1972	4.17	(1.61)	N/A	--	N/A	--	3.64	(1.41)	107,813
1973	4.53	(1.75)	4.50	(1.74)	2.40	(0.93)	3.04	(1.17)	88,178
1974	3.42	(1.32)	3.10	(1.20)	1.10	(0.42)	2.10	(0.81)	48,808
1975	4.58	(1.77)	4.00	(1.54)	2.50	(0.97)	3.46	(1.34)	60,428
1976	4.51	(1.74)	4.79	(1.85)	3.82	(1.47)	4.36	(1.68)	130,784
1977	5.16	(1.99)	6.97	(2.69)	4.90	(1.89)	5.30	(2.05)	107,003
1978	3.37	(1.30)	5.92	(2.29)	5.15	(1.99)	4.59	(1.77)	104,497
1979	5.82*	(2.25)	9.00	(3.47)	5.40	(2.08)	6.60	(2.55)	126,824
1980	4.70	(1.81)	6.90	(2.66)	5.20	(2.01)	6.00	(2.32)	108,455
1981	2.90	(1.12)	4.70	(1.81)	4.90	(1.89)	4.10	(1.58)	82,745
1982	3.04	(1.17)	3.54	(1.37)	3.68	(1.42)	3.36	(1.30)	51,741
1983	2.30	(0.89)	3.30	(1.27)	3.60	(1.39)	3.00	(1.16)	58,823
1984	3.40	(1.31)	4.25	(1.64)	3.32	(1.28)	3.50	(1.35)	54,233
1985	2.34	(0.90)	3.47	(1.34)	3.19	(1.23)	3.06	(1.18)	41,788
1986	4.19	(1.62)	5.38	(2.08)	4.40	(1.70)	4.88	(1.88)	78,565
1987	7.41	(2.86)	7.46	(2.88)	5.09	(1.96)	6.81	(2.63)	78,210
1988	7.84	(3.02)	6.82	(2.63)	5.76	(2.22)	6.86	(2.65)	--

*Based on only 2 survey blocks completed
(Meyronne 29 mi^2 - 108 males)
(Sceptre South 20 mi^2 - 177 males)

Appendix 20. Saskatchewan Sharp-tailed Grouse and Hungarian Partridge Harvest 1972-1987

Year	Sharp-tailed Grouse Harvest	Hungarian Partridge Harvest
1972	107,813	77,093
1973	88,178	74,668
1974	48,808	33,608
1975	60,428	45,125
1976	130,784	90,897
1977	107,003	93,616
1978	104,497	60,585
1979	126,824	69,127
1980	108,455	66,349
1981	82,745	64,349
1982	51,741	41,743
1983	58,823	61,073
1984	54,233	59,794
1985	41,788	41,998
1986	78,565	92,270
1987	78,210	103,903

Appendix 21. Hungarian Partridge Reproduction* in Saskatchewan, 1987

Wildlife Management Area	Sample Size (wings)	% Juveniles	Juveniles/Adult
WMZ 1	72	82	4.54
WMZ 4	169	75	3.02
WMZ 5	62	77	3.43
GRASSLAND TOTAL	368	79	3.66
WMZ 15	153	79	3.78
WMZ 19	316	70	2.36
FARMLAND TOTAL	676	73	2.73
PARKLAND TOTAL	58	84	5.44
PROVINCE	1102	76	3.10

*Based on sample of wings from hunter-killed birds. Zones with samples of less than 50 wings not shown.

Appendix 22. Hungarian Partridge Reproductive Index 1975-87
(Based on Wing Samples from Harvest)

(Juveniles/Adult in Harvest)

Year	Grassland	Farmland	Parkland	Province
1975	2.85	4.58	2.33	3.74
1976	1.69	3.70	3.50	2.56
1977	4.23	2.57	3.25	2.78
1978	2.77	2.95	5.00	2.97
1979	2.18*	4.42	2.57	3.92
1980	2.24	3.17	5.33*	3.11
1981	1.38	1.52	1.46*	1.50
1982	5.00*	2.86	3.50*	2.99
1983	2.38	3.46	6.00*	3.21
1984	2.13	3.42	3.10	2.67
1985	3.40	3.88	3.67*	3.60
1986	5.07	5.70	6.40*	5.50
1987	3.66	2.73	5.44	3.10
1975-86 $\bar{x}$	2.94	3.52	3.84	3.21

*Sample less than 50 wings

Appendix 23. Saskatchewan Pheasant Licence Sales, Hunting Activity and Harvest, 1972-1987

Year	Harvest	Licence Sales	Active Hunters
1972	10,195	5,097	3,921*
1973	18,260	6,329	4,348*
1974	8,589	3,935	3,642
1975	10,398	4,816	3,810
1976	14,488	6,166	4,619
1977	19,097	6,973	5,726
1978	10,165	6,186	4,476
1979	7,060	5,341	3,441
1980	11,823	6,019	4,150
1981	12,536	6,418	4,825
1982	7,511	5,713	3,915
1983	15,857	0	6,348
1984	12,182	0	4,975
1985	7,084	0	3,704
1986	10,557	0	4,767
Averages			
1972-86 $\bar{x}$	11,720	1972-82 $\bar{x}$ 5,727	1972-86 $\bar{x}$ 4,444
1987	16,439	0	5,523

*Interpolated from harvest estimate divided by birds taken per active hunter.

Appendix 24. Saskatchewan Pheasant Spring Breeding Population Index and Harvest, 1972-1988

Year	Provincial Index Crow Calls Per Stop	Source of Data	Harvest
1972	2.72	1975 season proposals	10,195
1973	3.83	1975 season proposals	18,260
1974	1.43	1975 season proposals	8,589
1975	1.82	1976 spring pheasant surveys	10,398
1976	2.05	1976 spring pheasant surveys	14,488
1977	2.91	1978 season proposals	19,097
1978	2.00	1978 season proposals	10,165
1979	1.89	1980 season proposals	7,060
1980	2.94*	1980 season proposals	11,823
1981	2.90	1981 season proposals	12,536
1982	2.20	1982 season proposals	7,511
1983	3.60	1983 season proposals	15,857
1984	3.25**	1986 season proposals	12,182
1985	1.93	1986 season proposals	7,084
1986	1.78	1986 season proposals	10,557
1987	4.86	1987 season proposals	16,439
1988	5.33	1988 season proposals	--

* This index excludes routes new or altered from 1979 or 1980 and excludes the Val Marie route (poorly done in 1979).

**Index excludes routes not comparable to 1985.

Appendix 25. Ruffed Grouse Reproduction* in Saskatchewan, 1987

Wildlife Management Area	Sample Size	% Juveniles	Juveniles/Adult
FARMLAND TOTAL	8*	37	0.60
WMZ 33	183	85	5.54
WMZ 37	74	81	4.29
PARKLAND TOTAL	374	80	3.92
WMZ 53	54	69	2.18
WMZ 54	55	78	3.58
FOREST FRINGE TOTAL	197	77	3.28
WMZ 56	222	77	3.27
WMZ 66	54	87	6.71
WMZ 67	295	83	4.90
WMZ 69	51	73	2.64
FOREST TOTAL	892	81	4.37
PROVINCE	1471	80	4.02

*Based on sample of wings from hunter-killed birds. Areas with samples of less than 50 generally not shown.

Appendix 26. Ruffed Grouse Reproductive Index, 1979-1987
(Based on Wing Samples from Harvest)

Juveniles/Adult in Harvest

Year	Farmland	Parkland	Forest Fringe (WMZ 48-55)	Forest	Province
1979	1.96	2.21	N/A	3.00	2.43
1980	1.03	1.39	N/A	1.84	1.41
1981	1.19	3.12	N/A	2.77	2.30
1982	1.23*	2.43	N/A	3.80*	2.28
1983	1.14*	2.29	N/A	4.80	2.51
1984	1.90*	1.75	3.17*	1.93	1.97
1985	1.11*	3.62	3.24	3.77	3.45
1986	3.08*	4.27	3.00	3.22	3.37
1987	0.60*	3.92	3.28	4.37	4.02
1979-86 Average	1.36	2.29	3.09**	2.94	2.44

* Sample size less than 50 wings
**1984-86 Average

Appendix 27. Saskatchewan Ruffed and Spruce Grouse Harvest, 1972-1987

Year	Ruffed Grouse Harvest	Spruce Grouse Harvest
1972	29,853	3,789
1973	12,743	1,363
1974	14,205	3,220
1975	36,274	10,341
1976	83,805	13,066
1977	94,353	15,990
1978	94,203	11,779
1979	86,309	13,164
1980	91,519	11,580
1981	36,711	5,876
1982	16,886	3,175
1983	13,521	3,945
1984	12,986	4,345
1985	15,074	4,229
1986	47,978	11,883
1987	89,322	14,213